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**ADVERBS OF QUANTIFICATION IN  
MANDARIN CHINESE**

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**Ph.D**

**The Hong Kong Polytechnic University**

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**The Hong Kong Polytechnic University**

**Department of Chinese and Bilingual Studies**

**Adverbs of Quantification in Mandarin Chinese**

**Sun Jiaming**

A thesis submitted in partial fulfillment of  
the requirements for the degree of Doctor of Philosophy

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## Abstract

This dissertation conducts a semantic study to three pairs of quantifying adverbs, or adverbs of quantification, in Mandarin Chinese, including *Yizhi* and *Zong(shi)*, *Changchang* and *Wangwang*, and *Ouer* and *Youshi*. These adverbs are previously categorized as temporal adverbs or frequency adverbs. Based on data from CCL and BCC, we have found that not all of the readings of these adverbs are correlated with time or frequency and some of them should be considered as the atemporal reading (de Swart 1993). Various solutions have been proposed in order to give a unified account to the temporal and atemporal readings of these adverbs. The main problem of those proposals is that little attention has been paid to the internal variations among these adverbs. We propose that quantifying adverbs in Mandarin Chinese could be further sub-categorized into two types according to their essential meanings. The first type is temporal or frequency adverbs, including *Yizhi*, *Changchang* and *Ouer*. They are used to quantify the event in the sentence and denote a quantity of time length or frequency. The other type is probability adverbs, including *Zong(shi)*, *Wangwang* and *Youshi*. The main function of this type is to give a probability judgment. As for *Zong(shi)* and *Wangwang*, they denote that the relevant probability has surpassed a baseline probability. The baseline can be either objective or subjective (determined by the speaker). With regard to *Youshi*, the baseline is close to 0. It means that

the relevant probability should be at least above 0, thus giving rise to an existential reading.

In addition to the semantic distinctions of these two types, syntactic distributions are also discussed. It is proved that frequency adverbs and probability adverbs occupy different positions in the clause, thus forming another distinction – objective adverbs and subjective adverbs. Several criteria are developed to analyze the syntactic behaviors, including their linear order with negation, modals, other adverbs or adjuncts, as well as other distributions and relative order of co-occurrence. It is shown that subjective adverbs can only precede negation, modals, other adverbs or adjuncts, while objective adverbs are relatively free in such distributions. Therefore, we propose that subjective adverbs actually take scope over IP and represent speaker's commitment to the truth of the proposition, and thus should be categorized as epistemic adverbs or speaker-oriented adverbs (Ernst 2007, 2009), whereas objective adverbs should be regarded as modifiers or adjuncts of VP with the function of restricting the predicate.

The data show that subjective adverbs are always incompatible with non-veridical contexts. Based on Giannakidou's (non)veridical theory, it is argued that the incompatibility is attributed to the semantic clash of subjective adverbs and non-veridicality.

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## List of Abbreviations

BA	Marker of the <i>ba</i> construction
BEI	Passive marker <i>bei</i>
BING	Connective adverb <i>bing</i>
DE	Modification marker or postverbal resultative maker <i>de</i>
DP	Determiner phrase
FP	Functional phrase
GUO	Experiential aspect marker <i>guo</i>
IP	Inflectional phrase
LE	Perfective marker or sentence-final particle
SFP	Sentence-final particle
SUO	Marker of passivization <i>suo</i>
VP	Verb phrase
ZHE	Aspect marker <i>zhe</i>

# Chapter 1 Introduction

## 1.1 The notion of adverbs of quantification and related studies

### 1.1.1 Temporal adverbs and frequency adverbs

The quantifying adverbs to be investigated in the dissertation include *Yizhi* (一直), *Zong(shi)* (總是), *Changchang* (常常), *Wangwang* (往往), *Youshi* (有時), and *Ouer* (偶爾). In the literature of Chinese grammar, these adverbs are always termed as temporal adverbs or frequency adverbs (Chao 1968:784-785; Zhu 1982:198; Lu & Ma 1999:115-120; Liu et al 2001:212; B. Zhang 2010:149-150; Y. S. Zhang 2014:22).

The common ground of these adverbs is that they all involve some kind of quantity of related events. Many studies have classified them as temporal adverbs since events are closely correlated with time, like Chao (1968), Zhu (1982), and the most recent B. Zhang (2010). The classification of frequency adverbs was first proposed by Liu et al (1983). In their systems, *Yizhi*, *Zong(shi)* are considered as temporal adverbs, while *Changchang*, *Jingchang* and *Wangwang* are classified into frequency adverbs. In B. Zhang (2010), frequency adverbs is regarded as a sub-class of temporal adverbs.

In terms of frequency adverbs, sub-categories are also proposed. Zhou (1999) argues for the necessity of classifying frequency adverbs into sub-categories from the perspective of second language teaching and divides frequency adverbs into four types according to their frequency degrees.

**high frequency:** *yixiang* (一向), *lilai* (歷來), *conglai* (從來), *tongchang* (通常), *wangwang* (往往), *zong* (總), *zongshi* (總是), *xianglai* (向來)

**medium frequency:** *changchang* (常常), *jingchang* (經常), *shichang* (時常), *shishi* (時時), *bushi* (不時)

**semi-low frequency:** *youshi* (有時)

**low frequency:** *ouer* (偶爾) (Zhou 1999:118)

Zou (2006) categorizes frequency adverbs into two types: judgment frequency adverbs and descriptive frequency adverbs, according to whether the adverb can be followed by ‘*shi*’ (be) or adverb suffix ‘*de*’.

Besides the macroscopic study on the sub-categories of temporal adverbs or frequency adverbs, there are also many works focusing on the microscopic studies of some synonyms among these adverbs.

It is always believed that, as a sub-category of adverbs, the so-called temporal adverbs or frequency adverbs bear some similarities with other sub-categories. Syntactically, these adverbs are predicate-oriented adverbs, preferring the internal position, and they are typically positioned to the left of the main predicate and to the left of the unit it modifies (S.-Y Wang & C.-F Sun 2015).

### 1.1.2 Adverbs of quantification and related studies

Quantifiers are used to express the quantity of things or amount of stuff in human language (Lee 2012). In term of frequency adverbs, they mainly

denote the number of times of an event taking place within a time frame. They can be categorized as adverbs of quantification from the perspective that they all denote some kind of quantity (Lewis 1975), such as the following examples.

(1) John has often been to the movies.

(2) John has seldom been to the movies.

The adverbs *often* and *seldom* describe quantities of the relevant events, denoting the frequency within a period of time. Semantically, *often* and *seldom* behave like quantifiers *many* or *few*.

As nominal quantifiers, *many* and *few* mainly specify quantities of individuals or objects. The situation is much more complex for the quantifying adverbs since sometimes it is difficult to figure out its quantifying objects. It is important to note that not all of the examples using these adverbs are denoting some kind of quantity related to time or events, and this can be considered as the atemporal reading of these adverbs (de Swart 1993:14-15), such as the following examples.

(3) a. Cats often have green eyes.

b. Mostly, a cat hates water.

c. When it has blue eyes, a bear is sometimes intelligent.

In fact, the above sentences come close to the following counterparts.

(4) a. Many cats have green eyes.

b. Most cats hate water.

c. Some bears that have blue eyes are intelligent.

Partee (1991) proposes that there are at least two main kinds of quantificational ontology, quantification over individuals and quantification over cases, events, or situations. From this perspective, it would be simple to analyze quantifying adverbs as expressions of temporal quantification, since not all of their uses are relevant to time or frequency.

In order to give a unified account of the temporal and atemporal readings of quantifying adverbs, various solutions have been proposed. Lewis (1975) argues that adverbs of quantification like *always*, *usually*, or *never* are neither quantifiers over times nor events, such as the sentence ‘*A quadratic equation usually has two different solutions*’, since there are problems for both ways. He thus proposes that these adverbs are quantifiers over cases. What holds *always*, *sometimes*, *never*, or *usually* is what holds in, respectively, all, some, no, or most cases, but the notion of case is rather vague and in fact a case can mean anything in difference sentences.

De Swart (1993) argues for two fundamental problems in Lewis’ approach and proposes that quantifying adverbs can be interpreted as Universal Quantifiers over situations or eventualities. Following Berman (1987) and Heim (1990) and based on Kratzer’s version of situation semantics, in which situations are seen as parts of possible worlds, Fintel (2004) proposes that adverbs of quantification quantify over situations and propositions are sets of situations, intuitively those where the proposition

holds. Adverbs of quantification denote relations between sets of situations, just like determiner-quantifiers denote relations between sets of entities.

In addition to the various proposals on the issue of object that quantifying adverbs quantify over, there are other works that pay attention to the interaction of quantifying adverbs with aspectual markers, as well as other sentential operators (Pan 1993; Law 2006; Hu & Shi 2006; Hu 2008).

### 1.1.3 Syntax of adverbs

The linear order of adverbs is an interesting and valuable issue in syntactic studies, which has drawn plenty of attention. Since the topic concerns a sub-category of adverbs, it is necessary to give a brief review of related studies on syntax of adverbs.

There are two mainstream approaches concerning adverb syntax (Ernst 2007). One, advanced by Cinque (1999, 2004), proposes adverbs be in the specifier position of empty functional heads, each of which licenses a particular subclass of adverb. This approach relies mostly on purely syntactic devices and considers the contribution of semantics to adverbs indirect and the linear order of adverbs is determined by the syntactic component of Universal Grammar (UG). The other approach, with its antecedent in Jackendoff (1972), along the lines of Bellert (1977), Haider (2004), and Ernst (2002, 2007), considers the semantic contribution direct and employs largely semantic principles to restrict the order of adverbs.



No matter which approach is taken, there is consensus that the linear order of adverbs is fixed, which is determined either by the syntactic devices of UG or semantics directly. The rigid hierarchy of different types of adverbs is illustrated as following.

**Speech-act > Evaluative > Epistemic > Subject-oriented > Manner**

As for Cinque (1999, 2004), every semantically distinct adverb class has its own separate licensing head. There is a one-to-one relationship between position and interpretation, but this approach is challenged by Ernst (2007) with several pieces of evidence. One is that the interpretation redundancy of one adverb occurring in different positions; the other one is the problem of speaker-oriented adverbs following negation. These problems lead to a semantically based explanation. He thus argues that semantics actually plays a more substantial and direct role in determining the order of adverbs and all the restriction on linear order can be interpreted based on semantic principles.

In order to account for the rigid order of different types of adverbs, there are also some works focusing on distinctions of the higher (outer) and lower (inner) adverbs (or adverbials in general) in terms of syntactic and semantic behaviors. It is shown that not every type of adverb can undergo *wh*-movement, and those which cannot typically occupy higher positions in the clause (Cinque 1999:16-17; Y.-F Li et al 2012). For example, only manner adverbs are able to undergo *wh*-movement, while both evaluative adverbs and epistemic adverbs are not.

- (5) a. How skillfully/clumsily/cautiously did John mow his lawn?  
 b. \*How luckily/regrettably/surprisingly did John send his children money?  
 c. \*How probably/likely/presumably did John mow his lawn?

(Y.-F Li et al 2012:220)

In addition to *wh*-movement, distinctions of adverbs in different positions are shown by other movement types. The cleft construction involving adverbs in English is an example, since only manner and frequency adverbs are cleftable, while evaluative, epistemic adverbs are not.

- (6) a. It was quietly that John performed the sonata.  
 b. It was frequently that John performed the sonata.
- (7) a. \*It was probably that John performed the sonata.  
 b. \*It was luckily that John performed the sonata.  
 c. \*It was usually that John performed the sonata.

(Y.-F Li et al 2012:232)

Tsai (2008) discusses the syntactic distribution of *how*-questions across languages and their corresponding semantic interpretation. It is shown that causal *wh* and reason *wh* are sentential operators, whereas manner and instrumental *wh*'s are *vP* modifiers. The outer and inner distinction in syntax is illustrated by their linear order with several sentential elements, including modals, adverbs of quantification, control verbs, negation, as well as A-not-A questions. Further works in this field (Tsai 2015) prove that in Chinese and

other languages, the distinctions of inner and outer adverbials exist widely, including inner selfhood vs. outer selfhood, inner light verb vs. outer light verb, inner affective vs. outer affective, etc.

## 1.2 Research questions and objectives

In terms of quantifying adverbs, no matter which approach is taken in the interpretation, the starting point of the previous analysis is that all of these adverbs are categorized into one group, namely frequency adverbs or quantifying adverbs. The focus of debate is what kind of object these adverbs of quantification actually quantify over. The existing answer can be time, events, cases, situations, etc., and these adverbs denote some kind of quantity in general. My research proves that these phenomena exist in Mandarin Chinese as well. Based on large corpora, the data show that the actual situations are quite complex and there are even internal variations among this type of adverbs. Here are some interesting findings:

(a). The data in Mandarin Chinese show that sometimes the meaning of the so-called frequency adverbs is irrelevant to frequency and can be considered an atemporal reading (de Swart 1993). Such denotations are only applicable to some adverbs, but not to some others.

(8) 樂器總是/\*一直由發音體和共鳴器兩部分組成。

yueqi	zongshi	you	fanyin	ti	he
instrument	always	of	sounding	body	and

gongmingqi liang bufen zongcheng.

resonator two parts compose

‘The instrument is always composed of two parts: the sounding body and the resonator.’

(9) 高房子往往/\*常常比較涼快。

gao fangzi wangwang bijiao liangkuai.

high buildings usually more pleasantly cool

‘High buildings are usually more pleasantly cool.’

(10) 這些文字的線條有時/\*偶爾只勾勒出大體的輪廓。

zhexie wenzi de xiantiao youshi zhi goulechu

these character DE lines sometimes only sketch

dati de lunkuo.

outrough DE outline

‘The lines of these characters sometimes only sketch out the rough outline.’

(b). Some of the adverbs we focus on are near-synonyms in the dictionaries, such as *Youshi* and *Ouer*. In the data, we find that *Youshi* can have scope over *Ouer*, but not the other way around.

(11) 有時, 偶爾放鬆一下反而可以提高工作效率。

youshi, ouer fangsong yixia faner keyi

sometimes occasionally relax once instead would

tigao gongzuo xiaolü

improve work efficiency

‘Sometimes, occasionally having a relaxation would improve work efficiency.’

(12) \*偶爾, 有時放鬆一下反而可以提高工作效率。

ouer, youshi fangsong yixia faner keyi  
occasionally sometimes relax once instead would  
tigao gongzuo xiaoli  
improve work efficiency

(c). It is reasonable to assume that adverbs belonging to the same category should have similar syntactic distributions and semantic behaviors. The data prove that there are distinctions in syntactic distributions and semantic behaviors among these adverbs. For instance, only *Changchang* can follow negation, while its near-synonym *Wangwang* is unacceptable in such cases.

(13) 他週末不常常/\*往往出門。

ta zhoumo bu changchang/wangwang chumen.  
he weekends not often/usually go out  
‘He doesn’t often go out on weekends.’

Besides, only *Ouer* can be used in some non-veridical contexts, such as future and imperatives, with its counterpart *Youshi* incompatible.

(14) 我們要去美國了, 但以後春節還會偶爾\*有時回來看看。

women yao qu meiguo le, dan yihou

we will go United States LE but in the future

chunjie hai hui ouer/youshi

Spring Festival still will occasionally/sometimes

huilai kankan.

come back see

‘We will go to the United States, but we will still occasionally come back during Spring Festival in the future.’

(15) 累的時候偶爾/\*有時去跑跑步！

lei de shihou ouer/youshi qu paopaobu!

tired DE time occasionally/sometimes go to have a jogging

‘Have a jogging occasionally when you are tired!’

Three questions are involved here. First, if some of these adverbs are irrelevant to frequency, what kind of quantity do they involve? Why are there restrictions on this type of adverbs when they have the so-called atemporal readings? Second, how can we account for the differences in syntactic distributions of these adverbs? Third, how to account for the different semantic behaviors illustrated above?

All the three questions are related to the essential meanings of these adverbs and their variations. The language facts will lead to some interesting findings that might be applicable to other languages as well. My study mainly relies on large corpora from CCL (Center for Chinese Linguistics PKU, [http://ccl.pku.edu.cn:8080/ccl\\_corpus/](http://ccl.pku.edu.cn:8080/ccl_corpus/)) and BCC (BLCU Corpus Center,

<http://bcc.blcu.edu.cn/>), as well as Gigaword Chinese Corpus (<https://the.sketchengine.co.uk/auth/corpora/>), and we start with analyzing the essential meaning of each adverb and try to find out other distributional differences. The objective of the research is to give a unified account to the above questions and the results will show that the phenomena demonstrated behave in a principled pattern. The research may contribute to the theoretical studies of adverbs.

### **1.3 Overview of the dissertation**

There are four main chapters in this dissertation, in which I choose three pairs of near-synonyms. In Chapter 2, I discuss the quantificational uses of *Yizhi* and *Zong(shi)* and analyze the semantic connections of different senses of *Zong(shi)* based on the essential meaning we propose. Chapter 3 presents a comparison of *Changchang* and *Wangwang*, as well as subtle differences between *Wangwang* and *Zong(shi)*. Chapter 4 mainly focuses on *Ouer* and *Youshi*. The different syntactic behaviors of each pair of adverbs are discussed in each chapter as well. In Chapter 5, we provide an account for the non-veridical contexts constraints on certain quantifying adverbs based on Giannakidou's non-veridicality theory. Chapter 6 will conclude the dissertation.

## Chapter 2 Quantifying adverbs *Yizhi* and *Zong(shi)*<sup>1</sup>

This chapter will be devoted to the first pair of quantifying adverbs we want to investigate in my dissertation: *Yizhi* ('all the time') and *Zong(shi)* ('always'). This chapter consists of six sections. Section 2.1 introduces the categorization of *Yizhi* and *Zong(shi)* in the previous literature of Chinese grammar. Section 2.2 explores the two quantificational uses of *Yizhi*. Section 2.3 points out that the essential meaning of *Zong(shi)* is to denote a probability, which is distinct from that of *Yizhi*. Based on the probability reading of *Zong(shi)*, Section 2.4 analyzes the semantic connections between different senses of *Zong(shi)* in Mandarin Chinese. Section 2.5 investigates the different syntactic positions of *Yizhi* and *Zong(shi)*. Syntactically, *Zong(shi)* occupies a higher position in the clause due to its subjective feature. Section 2.6 is the summary.

### 2.1 Introduction

As two commonly used adverbs in Mandarin Chinese, the meanings of *Yizhi* and *Zong(shi)* are quite similar and they are glossed mutually in some Chinese dictionaries or grammar books, such as '*Xiandai Hanyu Babaici*' (現代漢語八百詞) or '*Xiandai Hanyu Cidian*' (現代漢語詞典).

---

<sup>1</sup> According to the data we have collected, the distinction of *Zong* and *Zongshi* is that *Zongshi* can be collocated with both stage-level predicate and individual predicate, while *Zong* mostly can only be collocated with stage-level predicate (Carlson 1977). This distinction is not relevant to the analysis in this chapter. So basically, we ignore the differences and use *Zong(shi)* directly in the following discussion.



In the literature, both are categorized as temporal adverbs (Chao 1968; Zhu 1982; Liu et al 1983). There are also some subsequent works which distinguish them, classifying *Yizhi* as a temporal adverb, *Zong(shi)* as a frequency adverb (Y.-S Zhang 2014; B. Zhang 2010). No matter which terms they use, both are closely associated with some kind of quantity, relating to the main predicate of the sentence. From this perspective, we can consider them Quantifying Adverbs or Adverbs of Quantification (Lewis 1975). The main content of this chapter is to figure out the specific quantificational uses of these two adverbs and to demonstrate the subjective feature of *Zong(shi)*.

## 2.2 Two quantificational uses of *Yizhi*

Shi (2004) divides the quantity that quantifying adverbs describe into two types: *continuous quantity* and *repetitive quantity*. The continuous quantity indicates the time length of continuity of some state or activity, and adverbs of this type include *Yizhi*(一直), *Yixiang*(一向), *Yidu*(一度), *Conglai*(從來), *Xianglai*(向來), etc. The repetitive quantity mainly describes the times of some repetitive activity within a time frame. Adverbs of this type are *Zong(shi)*(總是), *Changchang*(常常), *Jiangchang*(經常), *Wangwang*(往往), *Youshi*(有時), *Ouer*(偶爾), etc. From this perspective, *Yizhi* is different from *Zong(shi)* in that it indicates the continuous reading while *Zong(shi)* mainly denotes the repetitive reading.

According to the different situation types of the verb (Vendler 1967;

Smith 1991), the continuous quantity which *Yizhi* expresses can be further classified into two types:

(a). The verb of the predicate is a state, with no dynamics and no internal structures. *Yizhi* means that the state is continuous in a certain period of time.

*Yizhi* in this type of sentences cannot be replaced by *Zong(shi)*.

(1) 我一直從事互聯網的工作。

wo yizhi congshi hulianwang de gongzuo.

I all the time engage in internet DE work

‘I am engaged in the work of internet all the time.’

(2) 公司總部一直在廣州。

gongsi zongbu yizhi zai Guangzhou.

company headquarters all the time at Guangzhou

‘The headquarters of the company are in Guangzhou all the time.’

(3) 他一直擔任雜誌的總編輯。

ta yizhi danren zazhi de zongbianji.

he all the time act as magazine DE editor in chief

‘He acts as the editor in chief of the magazine all the time.’

(b). The verb stands for an activity that lasts a short period but can be repeated. *Yizhi* in this situation means the repetitive activity happens constantly in a period of time.

(4) 這一理論誕生以來，一直受到質疑。

zheyi lilun danshengyilai, yizhi shoudao zhiyi.

this theory coming into being all the time was questioned

‘After coming into being, this theory was questioned all the time.’

(5) 這些年我一直給他寄錢。

zhexie nian wo yizhi gei ta jiqian.

these years I all the time to him send money

‘I send money to him all the time these years.’

It is notable that in the examples (4) and (5), *Yizhi* can be replaced by *Zong(shi)*.

(6) 這一理論誕生以來，總（是）受到質疑。

zheyi lilun danshengyilai, zong(shi) shoudao zhiyi.

this theory coming into being always was questioned

‘After coming into being, the theory was always questioned.’

(7) 這些年我總給他寄錢。

zhexie nian wo zong gei ta jiqian.

these years I always to him send money

‘I always send money to him these years.’

It is necessary to point out that the meanings of these sentences have changed after replacement. As we have argued, *Yizhi* means that the repetitive activity happens constantly in a period of time. But when replaced by *Zong(shi)*, the activity is no longer constant and it is possible that the event described only happens for several times. Furthermore, it looks like on the surface that *Zong(shi)* behaves like a frequency adverb and is quite similar in

meaning to *Jingchang* and *Changchang*. However, we also observe that *Zong(shi)* is essentially different from the other two high frequency adverbs and therefore they are not interchangeable in some other contexts. We will illustrate this in the next section.

Even though the situation types of the verbs are different, the meanings of *Yizhi* in the above examples are almost the same. Both readings indicate the time length of continuity of some state or activity. The two readings of *Yizhi* are different from that of *Zong(shi)*, and they are not interchangeable.

*Yizhi* also has another quantificational use which is quite similar with *Zong(shi)* and the two adverbs are mutually exchangeable in certain contexts.

(8) a. 他們在與客戶簽訂合同時，一直提出各種要求。

tamenzai yu kehu qianding hetong shi,  
they at with clients sign contracts time  
yizhi tichu gezhong yaoqiu.  
all the time propose various requests

‘They proposed various requests all the time when they signed contracts with the clients.’

b. 他們在與客戶簽訂合同時，總（是）提出各種要求。

tamen zai yu kehu qianding hetong shi,  
they at with clients sign contracts time  
zong(shi) tichu gezhong yaoqiu.  
always propose various requests

‘They always proposed various requests when they signed contracts with the clients.’

- (9) a. 李鴻章雖請求他們的幫助，他們一直保持中立。

Li Hongzhang sui qingqiu tamen de bangzhu,

Li Hongzhang although ask their DE help

tamen yizhi baochi zhongli.

they all the time keep neutral

‘Although Li Hongzhang asked their help, they kept neutral all the time.’

- b. 李鴻章雖請求他們的幫助，他們總是保持中立。

Li Hongzhang sui qingqiu tamen de bangzhu,

Li Hongzhang although ask their DE help

tamen zongshi baochi zhongli.

they always keep neutral

‘Although Li Hongzhang asked their help, they always kept neutral.’

In the examples above, there are two sets of events in the proposition. This is different from the first quantificational use of *Yizhi*, in which there is only one set of event involved in the proposition. The function of *Yizhi* in such a case is to denote a proportional or relational reading (Partee 1988; de Swart 1993; Pan 1993). It means that whenever A happens, B also happens with no exception. Put another way, the intersection of A and B divided by A should be 1.

$$|A \cap B|/|A|=1$$

Taking (8) as an example, the sentence expresses that ‘*whenever they signed contracts with the clients, they proposed requests with no exception*’.

The function of *Yizhi* in such cases is similar to that of ‘*dou*’, which indicates a universal quantification.

So far, we can summarize the two quantificational uses of *Yizhi* as follows.

a. *Yizhi* denotes the time length of continuity of some state or activity, and with this reading, is not mutually exchangeable with *Zong(shi)*.

b. *Yizhi* denotes a proportional reading which indicates that whenever A happens, B also happens with no exception. This is similar to universal quantification and this *Yizhi* can be replaced by *Zong(shi)*.

### **2.3 *Zong(shi)* as a probability expression**

According to the analysis above, *Yizhi* can be replaced by *Zong(shi)* only in its second quantification use, in which *Yizhi* has a proportional reading. When in the proportional reading, *Yizhi* always requires two sets of events. Since events are closely related with time, even though *Yizhi* denotes a proportional reading, it is still in the domain of temporal quantification. That is why in the previous literature, *Yizhi* is typically categorized as a temporal adverb. However, it is important to note that, not all the proportional uses of *Zong(shi)* are related to time, as shown by the following examples.

(10) 世事總是偶然中寄寓著必然。

shishi                      zongshi ouran              zhong jiyu              zhe  
things in the world    always accidental    within contain ZHE  
biran.

inevitable

‘As for things in the world, there are always the inevitable within  
the accidental.’

(11) 兒童的思維總是從形象思維發展到抽象思維。

ertong              de siwei              zongshi cong              xingxiang              siwei  
children              DE thinking always    from              image              thinking  
fazhan              dao chouxiang              siwei.

develop              to              abstract              thinking

‘The development of children’s thinking is always from image  
thinking to abstract thinking.’

(12) 樂器總是由發音體和共鳴器兩部分組成。

yueqi              zongshi you fayin              ti              he              gongmingqi  
instrument always of sounding    body              and resonator  
liang              bufen              zucheng  
two              parts              compose

‘The instrument is always composed of two parts: the sounding body  
and the resonator.’

Examples (10)-(12) all bear some proportional reading, but they are not

related to time. For instance, (12) means that ‘*most of the instruments are composed of two parts, the sounding body and the resonator*’. *Zongshi* here also concerns two sets, but they are not events sets. Instead, it indicates the relation between two sets of entities. It indicates that the proportion of the subset has reached or surpassed a baseline or standard.

From this perspective, the previous categorization of *Zong(shi)* as a temporal adverb is inaccurate, because it only addresses part of the data. In the following, we propose that the essential meaning of *Zong(shi)* is actually probability. The sentence using *Zong(shi)* denotes a probability.

There are several definitions for probability, some of which are as follows.

a. Relative Probability

A view that goes back to Poisson (1837) is that the probability judgment  $P(A|B)$  expresses a statement of limiting relative frequency, that is, the mathematical limit of the proportion of Bs among As as the number of Bs approaches infinity.

If we want to know how likely smokers are to get lung cancer, we count the number of cancer patients among smokers, and divided by the total number of smokers in our sample. We do this for large samples, over long periods of time. As the sample grows larger and the duration of the study grows longer, the ratio will get closer to the probability we are trying to find. The limit of this ratio as the sample size approaches infinity is the probability.



## b. Conditional Probability

In probability theory, a conditional probability measures the probability of an event A given that (by assumption, presumption, assertion or evidence) another event B has occurred.

$$P(A | B) = \frac{P(A, B)}{P(B)} = \frac{\frac{n_{AB}}{N}}{\frac{n_B}{N}} = \frac{n_{AB}}{n_B}$$

The exact meaning of *Zong(shi)* could be related to either relative probability or conditional probability, depending on the specific properties of the sets involved. If the two sets are both event sets, it mainly denotes the conditional probability. When there are two set of individuals, of which most cases are the set and subset, it mainly indicates the relative probability. For instance, in the above examples, (8b) denotes a conditional probability, expressing that the times of that event A (*they propose requests*) and event B (*they sign contracts with the clients*) happen together divided by the times of that event B (*they sign contracts with the clients*) happens has surpassed a proportion. Correspondingly, (12) denotes a relative probability, which means that the subset (*instruments that composed of the two parts*) accounts for a large proportion of the set (*instruments*).

Talking about probability, there is always a baseline involved. Mathematically, it is called prior probability. The baseline is related to some principle, common sense or world knowledge, but in most cases, especially in the probability expression in a language, it prevalently relies on the

subjective standard which the speaker holds in mind. The subjective standard is a probability value which the speaker believes, in normal situations, the event should happen. From this perspective, *Zong(shi)* also differs from *Yizhi* in that it is a subjective statements whereas *Yizhi* denotes a purely objective quantity (whether it is an objective time length of continuity or a 100% proportion with no exception). The subjectivity of *Zong(shi)* can be illustrated from the following aspects.

First, as we have argued, the baseline of probability is typically related to some principle, common sense or world knowledge. But it sometimes relies on the speaker's own belief. That is because, a speaker does not always have complete knowledge about everything (s)he talks about. It is quite possible that (s)he says something which (s)he believes, but in fact, it is not in accordance with the fact.

Secondly, mathematically, everything should have a prior probability, which is usually an objective value. But in real world, especially when we use language, not all the things we talk about have a prior probability, such as the following example.

(13) 女朋友：你怎麼總不接我的電話？

nvpengyou: ni zenme zong bu jie wo de dianhua

girlfriend: you why always not answer my DE call

'Girlfriend: Why did you always not answer my call?'

It is difficult to form an objective value of probability for not answering

someone's phone call in the real life, but the speaker (*the girlfriend*) herself is likely to have some subjective belief of a normal probability of not answering her telephones, perhaps 0.01 (*once in one hundred call*). If the exact probability (*twice in ten call*) has surpassed this value, *Zong(shi)* can be used naturally.

This explains why *Zong(shi)* and other similar high frequency adverbs like *Jingchang* and *Changchang* all denote some kind of high value, but are not interchangeable in some contexts.

(14) 馬航總出航空事故。

mahang                      zong    chu    hangkong    shigu.

Malaysia Airlines    always    have    aviation    accidents

‘Malaysia Airlines always have aviation accidents.’

(15) A: 你怎麼總丟手機?

B: 我總共丟過兩次, 怎麼就總了?

A: ni        zenme    zong    diu    shouji?

you    why    always    lose    mobile phones

‘Why do you always lose your mobile phones?’

B: wo    zonggong    diu    guo    liangci,    zenme    jiu

I    all together    lose    GUO    twice    how come    thus

zong    le?

zong    LE

‘All together I lost mobile phones twice, how come ZONG?’

The events described in (14) and (15) happen for only few times. For instance, Malaysia Airlines only had two serious aviation accidents that we all know, but we can still use *Zong(shi)*. Even though the *Zong(shi)* in these two examples can be replaced by *Jingchang* and *Changchang*, the meanings will change after replacement.

(16) 馬航常常出航空事故。

mahang                      changchang chu      hangkong      shigu.

Malaysia Airline      often              have      aviation      accidents

‘Malaysia Airline often has aviation accidents.’

(17) 你怎麼經常丟手機？

ni              zenme      jingchang      diu              shouji?

you              why              often              lose              mobile phones

‘Why do you often lose mobile phones?’

If the events described happened for only twice, *Jingchang* and *Changchang* cannot be used here. The meanings of *Jingchang* and *Changchang* are that the event described happens regularly for many times within a time frame.

Some examples using *Jingchang* and *Changchang* are not interchangeable with *Zong(shi)* either.

(18) a. 他經常打球。

ta      jingchang      daqiu.

he      often              play basketball

‘He often plays basketball.’

b. \*他總打球。

ta zong daqiu.

he always play basketball

(19) a. 他常常游泳。

ta changchang youyong.

he often swim

‘He often swims.’

b. \*他總游泳。

ta zong youyong

he zong swim

However, the sentences become more acceptable when some temporal elements are added.

(20) 他這幾天總打球。

ta zhejitian zong daqiu.

he these days always play basketball

‘He always plays basketball these days.’

(21) 他這個月總游泳。

ta zhege yue zong youyong.

he this month always swim

‘He always swims this month.’

That is because for ordinary people, it is quite difficult to form a standard

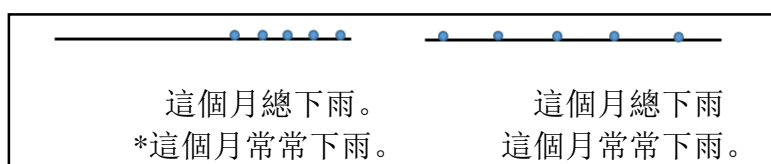
or baseline, of which the probability of playing basketball or having swimming is considered to be normal. It is easier to do so if there is a time frame. Ordinary people usually have some ideas about the normal probability of events in a certain period of time, such as the probability of a person playing basketball in one week, or the probability of a person swimming in one month. If the probability has surpassed this normal value, *Zong(shi)* can be used.

From this perspective, *Zong(shi)* can be termed as a dependent quantity expression. The interpretation of the adverb relies on a given quantity of reference (baseline), which is always determined by the speaker, according to his/her own belief or background knowledge. On the other hand, adverbs like *Yizhi*, *Jingchang*, *Changchang* are independent quantity expression, of which the quantity are objective, and does not depend on a contextually given quantity of reference (Doetjes 2007).

The subjective feature of *Zong(shi)* could be attributed to the arbitrariness of the baseline, and this explains why *Zong(shi)* is usually related to some negative emotions. The things described in these sentences are what the speaker does not expect or wish to see, especially when the baseline is relatively low in the speaker's belief, as shown by the examples of (14) and (15).

What's more, according to Stump (1981), the regular distribution of events over time axis is considered to be the characteristic property of

frequency adverbs. If we have a situation in which there are more rain in the latter part of a month, we can say ‘*zhegeyue zong xiayu*’ (這個月總下雨), but we cannot say ‘*zhegeyue changchang/jingchang xiayu*’ (這個月常常/經常下雨). As the following shows:



From this point of view, *Zong(shi)* does not fit the category of frequency adverb as *Jingchang* and *Changchang* do. We come to the conclusion that the essential meaning of *Zong(shi)* is to denote probability with regard to a subjective baseline.

#### 2.4 Connections between different senses of *Zong(shi)*

According to ‘*Xiandai hanyu babaici*’ (現代漢語八百詞) (Lü 1999), there are three different senses of *Zong(shi)* in Mandarin Chinese. In addition to the so-called temporal reading of ‘*yizhi*’ and ‘*yixiang*’, there are two other senses.

The first one is to denote a speculation, or estimation. It always appears with some quantity expressions, and accompanies epistemic adverb ‘*dagai*’ (‘probably’).

(22) 這房子蓋了總有二十年了。

zhe fangzi gai le zong you ershi nian le.

this house built LE zong have 20 years LE

‘This house is almost 20 year after being built.’

(23) 這幅畫大概總有兩米寬。

zhefu hua dagai zong you liangmi kuan.

this painting probably zong have two miters wide

‘This painting is almost two metres wide.’

The second one is to denote a reading more or less the same with the English phrase ‘*after all*’ or ‘*anyway*’, or sometimes ‘*nonetheless*’.

(24) 不要著急，問題總會解決的。

buyao zhaoji, wenti zong hui jiejie de.

don’t worry problem zong will be solved SFP

‘Don’t worry, the problem will be solved after all.’

(25) 事實總是事實，你總不能歪曲事實。

shishi zong shi shishi, ni zong buneng waiqu shishi.

fact zong is fact you zong cannot distort fact

‘After all, the fact is the fact, and you cannot distort it.’

(26) 成績雖然還不理想，但總算一個進步。

chengji suiran hai bu lixiang, dan zong suan yige

result although still not ideal yet zong count as a

jinbu.

progress

‘Although the result is still not ideal, it counts as a progress after all.’

Based on the generalization in the previous section, the essential



meaning of *Zong(shi)* is that of a probability expression based on the speaker's belief. It denotes the speaker's judgment of the probability of an event or proposition, namely, *Zong(shi)* indicates a high probability. Given this, different senses of *Zong(shi)* seem to come from the same source.

The reading of estimation or speculation could be considered the speaker's judgments of probability. The only difference is that the object for judgment in this case is the quantity of some entities. The proposition of sentence (23) is that '*there is high probability that the painting is 2 metres wide*'. The probability of *Zong(shi)* is related to the speaker's subjective judgment, explaining why this sense of *Zong(shi)* often accompanies with the epistemic adverbs '*dagai*' (大概) ('probably') or '*yinggai*' (應該) ('should'), and there are always co-occurrences of sentence final particle '*ba*' (吧) indicating an uncertainty (Zhao 2015).

The second sense of '*anyway*', '*after all*' is also related to probability. The sentence using *Zong(shi)* means that from the speaker's perspective, there is a high probability that the thing will happen, even though it may take a long time or involve difficulties, as the following examples demonstrate.

(27) 不要著急，問題總會解決的。

buyao zhaoji, wenti zong hui jiejue de.

don't worry problem zong will be solved SFP

'Don't worry, the problem will be solves after all.'

(28) 冬天總會過去，春天總會到來。

dongtian zong hui guoqu, chuntianzong hui daolai.

winter zong will pass spring zong will come

‘Anyway, the winter will pass, and the spring will come.’

Furthermore, if the speaker commits himself to the truth of the proposition, believing there is high probability for the proposition to be true, he will use *Zong(shi)* in a concessive context, in which a pragmatic scale is implied (Deng 2012).

(29) 給我五個不行，給我兩個總可以吧。

gei wo wuge bu xing, gei wo liangge zong

give me five not ok give me two zong

keyi ba.

ok SFP

‘You cannot give me five. Nonetheless, two is OK. Isn’t it?’

(30) 我不去打球，去看看球場，看看大家總可以吧。

wo bu qu daqiu, qu kankan qiuchang,

I not go to play basketball go to see the court

kankan dajia zong keyi ba.

see you zong ok SFP

‘I promise not to play basketball. Anyway, it would be OK for me to see the court, and see you all.’

(31) 成績雖然不理想，但總算一個進步。

changji suiran bu lixiang, dan zong suan yige

result although not ideal yet zong count as a  
jinbu.

progress

‘Although the result is still not ideal, it counts as a progress after all.’

The pragmatic scale of (29) is a numeral scale ‘*wuge(five), sige(four), sange(three), liangge(two)...*’. The sentence means that even though a number higher than two is not acceptable, the proposition in which *Zong(shi)* appears still stand, or with a high probability to be true. Similarly, (30) means that even though the proposition ‘*playing basketball*’ might not be acceptable, the proposition of ‘*seeing the court, seeing you all*’ will stand with high probability.

The case of (31) is a little bit complex, because the parallel proposition is implicit. The complete structure of the sentence should be:

(31’) 成績雖然不理想, (不能算是優秀或良好), 但總算一個進步。

chengji suiran bu lixiang, buneng suanshi youxiu  
result although not ideal cannot count as excellent  
huo lianghao, dan zong suan yige jinbu.  
or good yet zong count as a progress

‘Although the result is not ideal, and cannot be counted as excellent or good, but it can be counted as a progress anyway.’

The sentence means that even though the parallel proposition ‘*the result can be counted as excellent or good*’ does not stand, the proposition using

*Zong(shi)* still has high probability to be true.

Based on the assumption that *Zong(shi)* denotes high probability, the seemingly distinct senses of *Zong(shi)* in Mandarin Chinese can be explained in a simple and unified way.

## **2.5 Syntactic positions of *Yizhi* and *Zong(shi)***

We have proposed that the essential meaning of *Zong(shi)* is to denote a probability which surpasses the subjective baseline of the speaker. The sentence containing *Zong(shi)* constitutes a probability expression, or a subjective statement. The subjectivity is characteristic of *Zong(shi)*, in contrast with the objective quantificational property of *Yizhi*. The subjective elements behave differently in syntax from the objective ones, indicating that *Yizhi* and *Zong(shi)* belong to two different categories.

### **2.5.1 Modals**

The first piece of evidence comes from the linear order of *Yizhi*, *Zong(shi)* and modals. According to the mainstream classification, modals can be classified as epistemic modals, deontic ones, and dynamic ones. Under the cartographic approach (Rizzi 1997; Cinque 1999), the three modals have different syntactic properties and occupy different layers of the clause (Tsai 2010). The epistemic modal occupies the upper layer of sentence structure, and has scope over the entire IP, while dynamic modal is analyzed as VP modifier or adjunct. We will first use the modal as a ‘landmark’ for

distinguishing the different behaviors of *Yizhi* and *Zong(shi)*.

First and foremost, when ‘*neng*’ has a dynamic reading, *Yizhi* can appear either at the left or right of ‘*neng*’, whereas *Zong(shi)* can only position to the left of ‘*neng*’.

(32) 人民幣匯率能一直保持穩定。

renminbi    huilv                    neng    yizhi            baochi  
RMB        exchange rate    can    all the time    remain  
wending.

steady

‘The exchange rate of RMB can remain steady all the time.’

(33) 中國隊一直能在世界上保持領先優勢。

zhongguo    dui        yizhi            neng    zai shijieshang  
Chinese    team    all the time    can    in    the world  
remain    lingxian    youshi.

baochi    leading    position

‘The Chinese team can remian a leading position in the world all the time.’

(34) 學歷高的人總是能 (\*能總是) 得到更多的重視。

xueligao            de ren        zongshi neng    dedao    gengduo  
well educated    DE people    always    can    get    more  
de    zhongshi.

DE attention

‘Well educated people can always get more attention.’

(35) 他總(是)能 (\*能總是) 利用各種關係把事情辦成。

ta zong(shi) neng liyong gezhong guanxi ba  
he always can use various relationships BA  
shiqing bancheng.  
things done

‘He can always use various relationships to have things done.’

The modal ‘*hui*’ has a similar distribution when co-occurs with *Yizhi* and *Zong(shi)*, with *Yizhi* appearing both left and right to it, and *Zong(shi)* only to the left of it.

(36) 他相信，兩國友好關係一直會得到鞏固和發展。

ta xiangxin, liang guo youhao guanxi hui yizhi  
he believe two nations friendly relationship will all the time  
dedao gonggu he fazhan.  
get consolidated and developed

‘He believes that the friendly relationship between the two nations will get consolidated and developed all the time.’

(37) 這件事太重要了，老闆會一直盯著這件事。

zhejian shi tai zhongyao le, laoban hui yizhi  
the thing so important LE boss hui all the time  
ding zhe zhejian shi.  
pay close attention to ZHE the thing

‘The thing is so important that the boss will pay close attention to it all the time.’

(38) 證券公司總是會 (\*會議是) 把好的證券留存下來。

zhengquan gongsi zongshi hui ba hao de  
securities companies always will BA good DE  
zhengquan liucun xialai.  
securities retain

‘The securities companies always keep the good securities.’

(39) 每次籌劃活動, 她的建議總(是)會 (\*會議是) 得到大家的支持。

mei ci chouhua huodong, ta de jianyi zong(shi)  
every time plan activities her DE advice always  
hui dedao dajia de zhichi.  
will get everyone DE support

‘Her suggestions always get everyone’s support when planning activities.’

Syntactically, dynamic modal takes a VP as complement. The data above suggest that *Zong(shi)* can only position to the left of a dynamic modal. This shows that the syntactic position of *Zong(shi)* should be higher than VP, and is distinct from *Yizhi*, which serves as VP modifier or adjunct.

### 2.5.2 Speaker-oriented adverbs

Jackendoff (1972:89-90) and Ernst (2007, 2009) classify adverbs into

two types: subject-oriented adverbs (*cleverly, carefully, quickly...*) and speaker-oriented adverbs (*probably, happily, evidently...*). There are some constraints on the surface order of these two types of adverbs, with subject-oriented adverbs following speaker-oriented adverbs acceptable.

(40) Probably/happily/evidently, Max carefully/cleverly/quickly was climbing the walls of garden.

Probably/happily/evidently, Mas has carefully/cleverly/quickly been trying to decide whether to climb the walls.

Max probably/happily/evidently has carefully/cleverly/quickly been trying to decide whether to climb the walls.

(41) \*Carefully/cleverly/quickly, Max probably/happily/evidently was climbing the walls of garden.

\*Carefully/cleverly/quickly, Mas has probably/happily/evidently been trying to decide whether to climb the walls.

\*Max carefully/cleverly/quickly has probably/happily/evidently been trying to decide whether to climb the walls.

Ernst (2007, 2009) observes that epistemic adverbs (a larger class including speaker-oriented adverbs) can only appear to the left of subject-oriented adverbs.

Evaluative > Epistemic > Subject-oriented

We will show that *Zong(shi)* can only precede ‘*guyi*’ (‘deliberately’, ‘intentionally’), which is a typical subject-oriented in Mandarin Chinese,



while *Yizhi* is free in terms of the linear order with regard to ‘*guyi*’.

- (42) 每次經過這裡，他總是故意（\*故意總是）放慢腳步。

mei ci jingguo zheli, ta zongshi guyi  
every time pass by here he always deliberately  
fangman jiaobu.  
slow down steps

‘He always deliberately slows down his steps when passing by.’

- (43) 台灣當局總是故意（\*故意總是）誤導輿論，把“一國兩制”說成“以大吃小”。

Taiwan dangju zongshi guyi wudao  
Taiwan government always deliberately misleads  
yulun, ba ‘yiguoliangzhi’  
the public opinions BA ‘one country two systems’  
shuocheng ‘yidachixiao’.  
describe as ‘bully the weak’

‘The Taiwan government always deliberately misleads the public opinions, describing ‘one country one system’ as ‘bullying the weak.’

- (44) 他知道妹妹和他開玩笑，所以故意一直不出聲。

ta zhidao meimei he ta kaiwanxiao, suoyi  
he know sister with him make fun so  
guyi yizhi buchusheng.

deliberately all the time keep silent

‘Knowing that his sister was just making fun of him, he kept silent  
all the time.’

(45) 他最近一直故意和我們保持距離。

ta zuijin yizhi guyi he women baochi

he recently all the time deliberately from us keep

juli.

distance

‘He deliberately keeps a distance from us recently all the time.’

As a subject-oriented adverb, the syntactic position of ‘*guyi*’ should be between subject and VP. The data demonstrate that *Zong(shi)* must precede ‘*guyi*’ in linear order, proving that the syntactic position of *Zong(shi)* should be above IP.

### 2.5.3 Negation

When co-occurring with negation elements ‘*mei(ou)*’, *Yizhi* can appear either to the left or the right to it, while *Zong(shi)* only appears to the left of it.

(46) 他們雖然沒有一直在一起生活，但感情很好。

tamen suiran meiyou yizhi zai yiqi shenghuo,

they although not all the time live together

dan ganqing henhao.

but relationship good

‘Although they didn’t live together all the time, their relationship was good.’

(47) 語言文化課程一直沒有得到足夠重視。

yuyan wenhua kecheng yizhi meiyou dedao

language culture course all the time not receive

zugou zhongshi.

adequate attention

‘The course of language and culture all the time does not receive adequate attention.’

(48) 思維方式總是沒有（\*沒有總是）擺脫政府的框架。

siwei fangshi zongshi meiyou baituo zhengfu

thinking style always not get rid of government

de kuangjia.

DE framework

‘The way of thinking always does not get rid of the government’s framework.’

(49) 租來的房子總是沒有（\*沒有總是）家的感覺。

zulai de fangzi zongshi meiyou jia de ganjue.

rent DE house always not home DE feeling

‘A rented house doesn’t always have the feeling of home.’

It is notable that the co-occurrence of *Zong(shi)* and ‘*bu*’ seems to be a

counterexample, as shown by the following data. *Zong(shi)* can be positioned at the right of ‘*bu*’ sometimes.

(50) 中學作文并不總是寫自己想寫的事。

zhongxue      zuowei      bing      bu      zongshi      xie  
middle school      composition      BING      not always      write  
ziji      xiang      xie      de      shi.  
oneself      like      write      DE      things

‘The composition of middle school does not always means writing something one likes.’

(51) 中國的巨大變革并不總能保證各方面得到改善。

zhongguo      de      juda      biange      bing      bu      zong      neng  
China      DE significant      change      BING      not always      can  
baozheng      ge      fangmian      dedao      gaishan.  
ensure      various aspects      get      improved

‘China’s significant changes cannot always ensure the improvements of various aspects.’

(52) 教師的“好心”并不總是得到“好報”。

jiaoshi      de      ‘haoxin’      bing      bu      zongshi      dedao  
teachers      DE ‘good will’      BING      not always      get  
‘haobao’.

‘good feedback’

‘The teacher’s good will does not always get good feedback.’

Interestingly enough, we have found 498 examples of ‘*buzong(shi)*’ in CCL corpus, of which 392 examples show the pattern of ‘*bingbuzong(shi)*’ (並不總是). Namely, ‘*buzong(shi)*’ usually accompanies the connective adverb ‘*bing*’. Ma (2001) proposes that the main function of ‘*bing*’ is to emphasize the mood of negation, but it can only be used when the speaker aims to tell the truth or to deny others’ opinions. Put another way, ‘*bing*’ can only be used when there is a background proposition, which contrasts with the local proposition ‘*bing*’ appears (Yao & Shi 2015). In some examples, even though ‘*buzong(shi)*’ does not accompany ‘*bing*’, and there seems to be no background proposition, the background proposition is implied and could be added.

(53) 儘管正義存在於人們的生活中，但人不總是從正義的角度去認識生活。

jinguan zhengyi cunzai yu renmen de shenghuo

although justice exist in people DE life

zhong, dan ren bu zongshi cong zhengyi de

among yet people not always from justice DE

jiaodu qu renshi shenghuo.

perspective to know life

‘Although justice exists in their life, people do not always get to

know the life from the perspective of justice.’

(53’) 儘管正義存在於人們的生活中，(人應該總是從正義的角度去

認識生活), 但人不總是從正義的角度去認識生活。

jinguan      zhengyi cunzai    yu   renmen de      shenghuo  
although    justice exist    in   people DE      life  
zhong, (ren      yinggai zongshi cong    zhengyi de  
among people    ought to always    from    justice DE  
jiaodu      qu   renshi    shenghuo), dan ren      bu   zongshi  
perspective to    know    life            yet people    not always  
cong    zhengyi de    jiaodu      qu   renshi    shenghuo.  
from    justice DE perspective to    know    life.

‘Although justice exists in their life, and people ought to know life from the justice perspective, in fact they do not.’

The complete structure of (53) should be (53’), where there is an implicit proposition.

That is to say, ‘*bing*’ establishes a relation between a local proposition and a background proposition. What’s more, ‘*bing*’ cannot be used alone and always shows the pattern of ‘*bingbu*’. In a sense, ‘*bingbu*’ has lexicalized and the function of this word is to negate the hearer’s belief or the speaker’s original ideas.

We can argue that even though ‘*bu*’ precedes *Zong(shi)* in linear order, the function of ‘*bingbu*’ is to deny a belief towards this proposition instead of negating the proposition *Zong(shi)* appears. Put another way, ‘*bingbu*’ can be considered an epistemic word due to its interactional properties and the

syntactic position of ‘*bingbu*’ is higher than *Zong(shi)* in such cases.

Besides that, sometimes ‘*bu*’ can be used before *Zong(shi)* when ‘*bu*’ acts as a modal auxiliary. For instance, ‘*buneng*’ and ‘*bugai*’ can appear to the left of *Zongshi*, in which situations the function of ‘*buneng*’ and ‘*buga*’ are denoting speech acts.

(54) 你不能總是這樣!

ni buneng zongshi zheyang!

you cannot always like this

‘You can’t always behave like this!’

(55) 你不該總是遲到!

ni bugai zongshi chidao!

you should not always be late

‘You shouldn’t always be late!’

As previously discussed, the linear order of different types of adverbs is fixed, with *Speech-act* adverbs preceding *Epistemic* ones acceptable. It is reasonable to explain why *buneng* and *bugai* can be used before *Zongshi*, when they are indicating speech act reading.

On the other hand, ‘*bu*’ can precede ‘*yizhi*’ and the function of ‘*bu*’ is to negate ‘*yizhi*’ directly.

(56) 我很後悔當初為什麼不一直上學。

wo hen houhui dangchu weishenme bu yizhi

I very regret originally why not all the time

shangxue.

at school

‘I regret a lot why I was not at school all the time.’

(57) 就算不一直吃素，一星期少吃幾次肉，也算件功德。

jiusuan bu yizhi chisu, yi xingqi shao

even if not all the time be a vegetarian one week less

chi ji ci rou, ye suan jian gongde.

eat several times meat also count as a merit

‘Even if you cannot be a vegetarian all the time, it counts as a merit

if you eat less meat in a week.’

The above illustrations suggest the linear order of *Zong(shi)* and negation is also fixed, contrary to the relatively free order of *Yizhi* and negation. *Zong(shi)* can only take scope over negation, not vice versa.

#### 2.5.4 Co-occurrence of *Yizhi* and *Zong(shi)*

In the corpus, we find that when the two adverbs co-occur in one clause, it is only acceptable with *Zong(shi)* preceding *Yizhi*, not the other way around.

(58) 情況總是一直(\*一直總是)在變化。

qingkuang zongshi yizhi zai bianhua.

situation always all the time changing

‘The situation is always changing.’

(59) 工業革命后，人們總是一直(\*一直總是)以自己的利益為出發



點，片面強調對自然界的征服。

gongye geming hou, renmen zongshi yizhi

industrial revolution after people always all the time

yi ziji de liyi wei chufadian,

take one's own DE benefits as starting point

pianmian qiangdiao dui ziranjie de zhengfu.

persistently emphasize of nature DE conquest

'After the industrial revolution, people always take their own

benefits as the starting point, and persistently emphasize the

conquest of nature.'

In the corpus, we also find that *Yizhi* is used before *Zongshi* sometimes.

What's different, *Yizhi* and *Zongshi* appear in different clauses in such a case.

(60) 倫敦證交所的股東對這個合併案一直存有意見，總是認為證交所提供的資料太少。

Lundun zhengjiaosuo de gudong dui zhege

London stock exchange DE shareholder to this

hebing an yizhi cunyou yijian, zongshi

merger case all the time have views always

renwei zhengjiaosuo tigong de ziliao

believe stock exchange offer DE material

tai shao.

too few

‘The shareholders in London Stock Exchange have different views on this merger case all the time and always believe that Stock Exchange offer too few materials.’

In other occasion, *Zongshi* is used in the relative clause while *Yizhi* appears in the main one, and they should also be regarded as adverbs in separate clauses and the fact is not a counterexample to the linear constraint.

(61) 我在比賽之前，一直想要打破法國公開賽總是無法突破十六強的魔咒。

wo	zai	bisai	zhiqian,	yizhi	xiangyao
I	at	match	before	all the time	hope
dapo	faguo	gongkaisai	zongshi	wufa	
break	French	Open	always	cannot manage	
tupo		shiliuqiang	de	mozhou.	
breakthrough	final sixteen	DE	spell		

‘I am hoping all the time that I can manage to break the spell that there is always no breakthrough in the last sixteen in French Open.’

To sum up, except for the distinct meanings they denote, the two adverbs *Yizhi* and *Zong(shi)* also behave quite differently in syntax judging from the above illustrations. We have used *modals*, *subject-oriented adverbs*, *negation words* as the means of testing, as well as the linear order of co-occurrence. All the evidence has proved that *Yizhi* and *Zong(shi)* should be categorized as two different types of adverbs. *Yizhi* is relatively free in linear order with other

adverbs or negation, and this is the typical characteristic of ordinary temporal adverbs. On the other hand, *Zong(shi)* is syntactically constrained and it can only precede certain adverbs and negation. This is the unique property of a special sub-category of adverbs (H. Wang 2013).

As argued, the proposition using *Zong(shi)* is a subjective statement of probability. In a sense, the main function of *Zong(shi)* is to represent the speaker's high commitment to the truth of the proposition (Ernst 2009). From this perspective, *Zong(shi)* can be categorized as a sub-class of epistemic adverbs or speaker-oriented adverbs.

In terms of syntactic position, *Zong(shi)* appears in a higher layer of the clause, taking scope of the entire IP, because of its subjective feature. There are several alternative ways to analyze the syntactic behaviors of *Zong(shi)*. Under the assumption of cartographic approach (Rizzi 1997; Cinque 1999; Tsai 2008, 2015), *Zong(shi)* can be analyzed as the outer adverbials, whereas *Yizhi* mainly denotes an objective quantification and should be analyzed as inner adverbials, with the status of pure modifiers or adjunct of the predicate. Or more traditionally, *Zong(shi)* can be considered a high predicate of the sentence (Y.-S Zhang 2014), which still takes scope over other adverbs and negation.

## **2.6 Summary**

This chapter focuses on the different quantificational functions of *Yizhi*

and *Zong(shi)*, as well as the subjective characteristic of *Zong(shi)*. We illustrate the two quantificational uses of *Yizhi* and suggest that they are both related to time, and that is why *Yizhi* is termed as a typical temporal adverb in the literature. In contrast, the data show that not all the quantificational uses of *Zong(shi)* are related to time. We propose the essential meaning of *Zong(shi)* is to denote probability. Furthermore, we show that the probability expressed by *Zong(shi)* is related to a baseline determined by the speaker, which is the origin of the subjective property of this adverb. All the three senses of *Zong(shi)* can be analyzed in a unified way. Syntactically, *Zong(shi)* occupies a higher level in the clause. Several syntactic tests are adopted, including the linear order constraints with modals, speaker-oriented adverbs, negation, and relative order with *Yizhi*. We come to the conclusion that *Zong(shi)* should be categorized as a sub-class of epistemic adverbs or speaker-oriented adverbs, or be considered as the outer adverbial under the cartographic approach, while *Yizhi* denotes a purely objective quantification, and has the status of VP modifier or adjunct, or inner adverbial.

## Chapter 3 *Changchang* and *Wangwang*

This chapter is about another pair of quantifying adverbs: *Changchang* (‘often’) and *Wangwang* (‘usually’). As two commonly used adverbs in Mandarin Chinese, a lot of attention has been given to their properties. Section 3.1 is a review of previous literature. Section 3.2 is an investigation of the so-called pre-condition on the use of *Wangwang* and proves that the pre-condition is not a necessary requirement. This constraint is attributed to the essential meaning of *Wangwang*, which is distinct from that of *Changchang* as a frequency adverb. It is proposed in Section 3.3 that the essential meaning of *Wangwang* is to denote probability. The probability represented by *Wangwang* also involves a baseline. Section 3.4 is a discussion on the calculation of probability and is a comparison of the probability expression of *Zong(shi)* and *Wangwang*. Section 3.5 provides the evidence that *Wangwang* should be considered as a subjective adverb, with distinct syntactic distributions in comparison with objective adverb *Changchang*. Section 3.6 is the summary.

### 3.1 Temporal adverbs or frequency adverbs

Both *Changchang* and *Wangwang* are about the relative quantity of an event or activity, or they are both related to the *repetitive quantity*. The two adverbs are considered to be synonyms in Chinese dictionaries or grammar books, and in a number of Chinese-English dictionaries, they are annotated

with similar English words, namely ‘*frequently*’, ‘*often*’, ‘*usually*’ for *Changchang*, ‘*often*’, ‘*frequently*’, ‘*more often than that*’ for *Wangwang*.

In the literature, the two adverbs are categorized as temporal adverb (Lu & Ma 1999) or frequency adverb (a sub-class of temporal adverb) (B. Zhang 2010), or further termed as medium frequency adverb (Y.-S Zhang 2004).

In spite of those similarities, the two adverbs also have some differences, which have been already noticed by several scholars (Lü 1999; Lu & Ma 1999; Ma 2004 to list a few).

Firstly, *Wangwang* can only be used to describe the regularity of things or events based on past experience, whereas *Changchang* is not subject to this restriction. For example, in (1) and (2), *Changchang* and *Wangwang* are interchangeable, but in (3), (4), they are not mutually exchangeable as the situation described in (3) and (4) is not regular.

(1) 每逢節假日，他常常/往往去姥姥家。

meifeng jiejiari, ta changchang/wangwang qu  
when on holidays he often/usually go to  
laolao jia.  
Grandma’s home  
‘He often/usually goes to Grandma’s home on holidays.’

(2) 她很少一個人來看戲，常常/往往跟她丈夫一起來。

ta henshao yigeren lai kan xi,  
she seldom for oneself come see the opera

changchang/wangwang gen ta zhangfu yiqi lai.

often/usually with her husband together come

‘She seldom comes the opera by herself, and often/usually comes with her husband.’

- (3) 他常常/\*往往去姥姥家玩兒。

ta changchang/wangwang qu laolao jia waner.

he often/usually go to Grandma’s home to play

‘He often goes to Grandma’s home to play.’

- (4) 她常常/\*往往來看戲。

ta changchang/wangwang lai kan xi.

she often/usually come see the opera

‘She often comes to see the opera.’

Secondly, *Wangwang* can only be used to describe past events, rather than future situations or subjective intention. *Changchang* is not subject to such restrictions, as shown by (5) – (7).

- (5) 請你常常/\*往往來|我一定常常/\*往往來

qing ni changchang/wangwang lai

please you often/usually come

wo yiding changchang/wangwang lai

I certainly often/usually come

‘Please come here often.’ ‘I will come here often certainly.’

- (6) 以後週末，你要是沒事兒，常常/\*往往去看看姥姥。

yihou zhoumo, ni yaoshi meishi, changchang/wangwang

future weekend you if be free often/usually

qu kankan laolao.

go to visit your grandma

‘Please often go to visit your grandma if you are free during the weekend in the future.’

(7) 明年回上海以後，我得常常/\*往往去看看她。

mingnian hui shanghai yihou, wo de

next year return shanghai after I should

changchang/wangwang qu kankan ta.

often/usually go see her

‘I should often go to see her after returning to Shanghai next year.’

In addition to these findings, there are also several issues to be resolved.

- a. Why can *Wangwang* only be used to describe regularities? Or which factors are behind the regularities?
- b. Why cannot *Wangwang* be used in the contexts of future events or for subjective intention?

We believe that the two questions are closely correlated to the third one.

- c. What are the differences in quantificational use between *Changchang* and *Wangwang*? What are their essential meanings respectively?



### 3.2 The pre-condition of *Wangwang*

According to the previous studies, when using *Wangwang*, there is a pre-condition as in the cases in (1) – (2). The argument is that *Wangwang* can only be used to describe events with regularities. In the sentences using *Wangwang*, it is necessary to point out the conditions or results of related events, but it should be noted that not all conditions can be regarded as the pre-conditions of *Wangwang* and there are exceptions for that.

(8) 去年冬天我常常/\*往往去滑雪。

qunian dongtian    wo changchang/wangwang    qu huaxue.

last year winter    I    often/usually    go skiing

‘I often went skiing in winter last year.’

(9) 上個星期我常常/\*往往接到匿名電話。

shangge xingqi    wo changchang/wangwang    jiedao

last    week    I    often/usually    receive

niming    dianhua.

anonymous    call

‘I often received anonymous calls last week.’

In spite of the temporal elements ‘*qunian dongtian*’ (last winter) and ‘*shangge xingqi*’ (last week) in (8) and (9), the sentences are still unacceptable with *Wangwang*.

Compared with (1) and (2), it is easy to notice that the pre-condition for *Wangwang* is that there should be a plural set of events or set of temporal

frames in the background of the sentence, and the cardinality of the set should be at least 2. ‘*Last winter*’ and ‘*last week*’ both cover as an entire period of time, which are in fact two singleton sets. Therefore, we can further limit the requirement of the pre-condition to be a plural set of events with its cardinality above 1. The pre-condition restriction of *Wangwang* is related to another factor, with ‘*meige X*’ (every X) incompatible with *Wangwang* and there is a difference between *Wangwang* and *Zongshi* in this sense, which we will illustrate in Section 3.4.

Furthermore, it is important to note that not all the instances using *Wangwang* are accompanied with a pre-condition, as the following examples show.

(10) 高房子往往比較涼快。

gao fangzi wangwang bijiao luanguai.

high buildings usually more pleasantly cool

‘High buildings are usually more pleasantly cool.’

(11) 胖子往往猝死。

pangzi wangwang cusi.

the fat usually undergo sudden death

‘The fat usually undergo sudden death.’

(12) 有自閉症的孩子往往智商很高。

you zibizheng de haizi wangwang

have autism DE children usually

zhishang    henhao.

IQ            high

‘Children with autism usually have high IQ.’

There are no such pre-conditions for *Wangwang* in (10) – (12), but the sentences are quite natural and acceptable. This indicates that the pre-condition might not be the essential requirement for *Wangwang*. The restriction could be attributed to some other factors.

Apparently, there are special restrictions on the use of *Wangwang*, whereas *Changchang* is relatively free. In a sense, it means that the domain of use of *Changchang* is wider than that of *Wangwang*. However, not all instances using *Wangwang* can be replaced by *Changchang*, such as the respective cases of (13) and (14) after replacement.

(13) \*高房子常常比較涼快。

gao    fangzi        changchang    bijiao    liangkuai.

high    buildings    often        more    pleasantly cool

‘High buildings are often more pleasantly cool.’

(14) \*胖子常常猝死。

pangzi        changchang    cusi.

the fat        often        undergo sudden death

‘The fat often undergoes sudden death.’

‘*Cusi*’ (to undergo sudden death) of example (14) is an achievement activity in terms of situation type and cannot be repetitive. It is quite wired

for ‘*a fat to undergo sudden death*’ regularly within a time frame. Even though *Wangwang* can be replaced by *Changchang* sometimes, the actual meaning changes after the replacement<sup>2</sup>.

(15) 有自閉症的兒童常常智商很高。

you zibizheng de ertong changchang

have autism DE children often

zhishang hengao.

IQ high

‘Children with autism often have high IQ.’

Although more acceptable than (13) and (14), (15) has a meaning quite different from its counterpart (12). Example (15) means that the IQ of the autism children is sometime high and sometimes low, but it is high in more cases within a time frame, whereas (12) denotes a regularity, or a principle, that if a child has autism, (s)he is more likely to have high IQ. ‘*Zhishang hengao*’ (to have high IQ) is an individual-level predicate, but it is coerced to have a stage-level reading in (15) when co-occurring with *Changchang*.

This phenomenon is related to another distinction between *Changchang*

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<sup>2</sup> Hu & Shi (2006) mentioned an example ‘*Shanghai nanhai changchang xihuan Taiwan nihai*’ (上海男孩常常喜歡台灣女孩) and proposed that ‘*Changchang*’ in the sentence can denote a proportional reading, which means that ‘*boys in Shanghai who love Taiwan girls*’ constitute a large proportion. First of all, we consider that the sentence is only partially acceptable, with a relatively low degree of grammaticality. Secondly, ‘*Changchang*’ can only be interpreted with frequency reading in the sentence, and the individual-level predicate ‘*xihuan*’ (like) should be coerced into stage-level predicate reading in such a case. But if replaced by ‘*Wangwang*’, the sentence is totally grammatical with a proportional reading.

and *Wangwang*, namely, *Changchang* is only compatible with stage-level predicate, whereas there is no such restriction for *Wangwang*.

(16) 他週末常常去姥姥家。( *changchang* + stage-level predicate )

(17) 他週末往往去姥姥家。( *wangwang* + stage-level predicate )

(18) 有自閉症的兒童常常智商很高。

( *changchang* +stage/\*individual-level predicate )

(19) 有自閉症的兒童往往智商很高。

( *wangwang* + individual-level predicate )

Carlson (1977) proposes a distinction between stage-level predicate and individual-level predicate for ‘state-description’ and ‘property’ respectively. An important distinction is that a stage-level predicate can co-occur with numeral classifier phrases indicating the repetitive times of the activity, but an individual-level predicate is not allowed.

(20) 去兩次/看幾次

qu liang ci / kan ji ci

go there twice / see several times

(21) \*喜歡兩次/\*迷茫幾次

xihuan liang ci / mimang ji ci

like twice / be lost several times

This indicates that the quantificational use of *Changchang* is to denote the repetitive times of an event within a time frame. It is quite reasonable that in the previous literature, *Changchang* is categorized as a typical temporal

adverb, or more accurately a frequency adverb. But *Wangwang* does not fit the description. Not all the quantificational uses of *Wangwang* are related to time or frequency, such as cases of (10) – (12). We will argue that the phenomena are attributed to the essential meaning of *Wangwang*.

### 3.3 The essential meaning of *Wangwang*

The essential meaning of *Wangwang* is to express probability. A lot of related problems will be solved under this assumption.

Firstly, the exact meaning of *Wangwang* can be either relative probability or conditional probability. When two sets of events can be clearly identified, *Wangwang* has a conditional probability reading, calculating the probability of an event A co-occurring with another event B. Examples of this type of reading are (1) and (2). Sentence (1) counts the number of times when ‘*he goes to his grandma’s home on weekends*’, divided by the total number of ‘*weekends*’ to get the conditional probability. The relative probability is mainly about the relation between set and sub-set of some individuals, such as (10) – (12). Sentence (10) means that ‘*the high buildings*’ can be classified as two types: *pleasantly cool or not*, and the first type (*high buildings which are pleasantly cool*) accounts for a larger proportion of the buildings, or the probability of ‘*a high building to be pleasantly cool*’ is above 0.5.

Based on the probability assumption, the first question we raise in section 3.1 can be answered. Two sets are needed to calculate probability, no

matter it is conditional probability (two sets of events) or relative probability (set and sub-set of individuals). This will account for the pre-condition requirement for *Wangwang*. The sentence is usually bad when there is only one set of events in the sentence. Taking (3) as an example here (repeated as (22)).

(22) \*他往往去姥姥家玩兒。

ta wangwang qu laolao jia waner.  
 he usually go grandma home to play

If we want to calculate the conditional probability of ‘*he goes to his grandma’s home to play*’, there should be at least two sets, but there is only one set of events in the sentence. On the other hand, it is difficult to calculate the relative probability as well, since it is hard to image which set could be considered the set of this subset.

Sometimes, the requirement of two sets seems not sufficient for *Wangwang*. There should be a baseline for the probability judgments, and the meaning of *Wangwang* is to denote that the probability has surpassed a baseline, as the following examples demonstrate.

(23) 去年以來，我看望巴金先生時，常常/\*往往問起他的身體情況。

qunian yilai, wo kanwang BaJin xiansheng shi,  
 last year since I visit BaJin Mr when  
 changchang/wangwang wenqi ta de shenti qingkuang.

often/usually                      ask      his DE      physical conditions

‘Since last year, I often asked his physical conditions when I visited  
Mr BaJin.’

(24) 當地老鄉放羊、走路時，常常/??往往檢到藍寶石。

dangdi laoxiang      fang      yang      zoulu      shi,

local      fellow      herd      sheep      walk      when

changchang/wangwang      jiandao lanbaoshi.

often/usually                      find      sapphire

‘The local people often find sapphire when they are herding sheep or  
walking.’

Sentence (23) and (24) are not natural when *Wangwang* is used, with *Changchang* acceptable in comparison. According to the analysis, *Changchang* is a frequency adverb and can be used to describe the frequency of a repetitive event within a time frame. The frequency that *Changchang* demonstrates is an objective fact. With regard to *Wangwang*, there is usually a baseline involved. The reason for the unacceptability of *Wangwang* in (23) and (24) could be attributed to the lack of baseline. For the speaker in (23), there is no baseline as how likely ‘*I ask Mr BaJin’s physical conditions*’, let alone using *Wangwang* to indicate that the probability has surpassed this value. This applies to the situation in (24) as well. In (24), it is difficult to get a norm of how likely ‘*the local people find the sapphire*’, not to mention the value beyond that.



There are ways to save the above sentences using *Wangwang*, one of which is to add an epistemic adverb *hui* after *Wangwang*.

(25) 去年以來，我看望巴金先生時，往往會問起他的身體情況。

qunian yilai, wo kanwang BaJin xiansheng shi,  
last year since I visit BaJin Mr when  
wangwang hui wenqi ta de shenti qingkuang.  
usually will ask his DE physical conditions

‘Since last year, I will usually ask his physical conditions when I visit Mr BaJin.’

(26) 當地老鄉放羊、走路時，往往會檢到藍寶石。

dangdi laoxiang fang yang zoulu shi,  
local fellow herb sheep walk when  
wangwang hui jiandao lanbaoshi.  
usually will find sapphire

‘The local people will usually find sapphire when they are herbing sheep or walking.’

The interaction between probability adverbs and epistemic modals is a very interesting issue, which may be worth noting and further studying. I would like to offer a tentative analysis here. If *Wangwang* requires a baseline in the sentence, then *hui*, as an epistemic modal that is inherently a probability expression (Lassiter 2011), can trigger the baseline automatically.

Interestingly enough, if *Wangwang* is replaced by *Zong(shi)* in the these

examples, the sentences become much better. This is related to the baseline setting of these two adverbs, and might be related to different degrees of subjectivity of the two adverbs, which will be discussed in the next section.

In addition to the baseline requirement of *Wangwang*, there is a subjective-objective distinction between *Wangwang* and *Changchang*. According to Stump (1981), the regular distribution of events over the time axis is considered to be the characteristic property of frequency adverbs. If we want to calculate the frequency of a certain event, the event should happen many times during a period of time. Even though language use is vague and not mathematically accurate, the calculation of frequency is relatively objective. The statement of probability in terms of a baseline is always subjective, and the repeating of an event for many times is not a must for it. This contrast is illustrated by the following examples.

(27) 閱兵雖然幾年才有一次，但往往/\*常常能起到振奮人心的作用。

yuebing	suiran	jinian	cai you	yici, dan
military parade	although	a few years	just have	once yet
wangwang/changchang	neng	qidao	zhenfenrenxin	de
usually/often	can	play	inspiring	DE
zuoyong.				
function				

‘Although there is only one military parade in a few years, it can

usually inspire people.’

(28) 她性格很安靜，上課很少發言，但往往/\*常常一語中的。

ta xingge hen anjing, shangke henshao fayan,

her character very quiet in the class seldom speak

dan wangwang/changchang yiyuzhongdi.

yet usually/often to the point

‘Her comment is usually to the point, even though she is quiet and

seldom speaks in class.’

In sentence (27), ‘*jinian cai you yici*’ (just once in a few years) denotes a low frequency, which is incompatible with the high frequency adverb *Changchang* that requires many happenings of the relevant event. This is also the case for (28), ‘*henshao fayan*’ (seldom speak) is a low frequency expression, which clashes with *Changchang* semantically. From this perspective, it is inaccurate to term *Wangwang* as a high or medium frequency adverb, as in the previous literature. The main function of *Wangwang* is to denote probability with regard to a baseline.

### **3.4 Probability calculation and the comparison between *Zong(shi)* and *Wangwang***

A lot of related problems can be solved from the perspective of probability calculation. First and foremost, we have argued in section 3.2 that not all elements can be treated as the pre-condition of *Wangwang*, and the pre-condition should be a plural set, instead of a single period of time. That is

because when calculating probability, the cardinal number of the set should be at least 2.

Besides, there is a contrast between ‘*meifeng/meidang*’ (每逢/每當) and ‘*meige*’ (每個) when using *Wangwang*.

(29) 每逢週末他往往去姥姥家。

meifeng zhoumo ta wangwang qu laolao jia.

when weekends he usually go grandma’s home

‘He usually goes to grandma’s home on weekends.’

(30) \*每個週末他往往去姥姥家。

meige zhoumo ta wangwang qu laolao jia.

every weekend he usually go grandma’s home

‘He usually goes to his grandma’s home every weekend.’

As the data demonstrate, only ‘*meifeng*’ (when) is compatible with *Wangwang*. The function of *Wangwang* is to denote a high probability with regard to a baseline, but the probability should not be equal to 1. When ‘*meige*’ (every) is used, the phrase ‘*meige zhoumo*’ (every weekends) is a DP (Huang & Shi 2008, 2011), of which ‘*mei*’ (every) is the Determiner, and the phrase forms a universal quantifier which means every member in the set of weekends is relevant to the event in the proposition. In such a case, the universal quantificational adverb ‘*dou*’ should be used to indicate the inclusiveness, and the DP becomes a singleton set. On the other hand, ‘*meifeng zhoumo*’ (on weekends), in which ‘*mei*’ should be analyzed as an

adverb instead of a determiner, does not constitute a DP denoting universal quantification, and thus only forms a plural event set. If ‘*meifeng zhoumo*’ (on weekends) co-occurs with ‘*dou*’, *Wangwang* is no longer acceptable.

(31) 每個週末他都去姥姥家。

meige zhoumo ta dou qu laolao jia.

every weekends he all go grandma’s home

‘He goes to grandma’s home on every weekends.’

(32) \*每逢週末他都往往去姥姥家。

meifeng zhoumo ta dou wangwang qu laolao jia.

when weekends ta all usually go grandma’s home

It is important to note that in the cases of ‘*meige zhoumo*’ (every weekends), *Zong(shi)* can be used. As we have argued in Chapter 1, *Zong(shi)* is compatible with a probability very close to 1. When the probability is very close to 1, *Zong(shi)* has a quasi-universal quantificational reading, more or less the same with ‘*dou*’.

(33) 每個週末他總是去姥姥家。

meige zhoumo ta zongshi qu laolao jia.

every weekends he always go grandma’s home

‘He goes to grandma’s home on every weekends.’

*Zong(shi)* and *Wangwang* are not interchangeable in other cases, especially in the situations when the speaker expresses some negative emotions.

(34) 馬航總(是)/\*往往出航空事故。

mahang                      zong(shi)/wangwang chu                      hangkong

Malaysia airline always/usually                      have                      aviation

shigu.

accidents

‘Malaysia airline always has aviation accidents.’

(35) 你怎麼總(是)/\*往往丟手機?

ni zeme                      zong(shi)/wangwang diu                      shouji?

you why                      always/usually                      lose                      mobile phones

‘Why do you always lose mobile phones?’

Both *Zong(shi)* and *Wangwang* represent probability with regard to a baseline. The distinction demonstrated here could be attributed to the setting of baseline. The baseline for *Wangwang* is usually one accepted by the majority of people. *Wangwang* means that from the speaker’s perspective, the actual probability has surpassed the norm. Whereas for *Zong(shi)*, the baseline can be very subjective and determined by the speaker regardless of other people’s opinion. That is why there could be a conflict in setting the baseline when using *Zong(shi)* and the disagreement here is faultless (Kennedy 2013).

(36) A: 你怎麼總丟手機?

B: 我只丟過兩次，怎麼就總了?

A: ni zenme zong diu shouji?

B: wo zhi diu guo liangci, zenme jiu zong le?

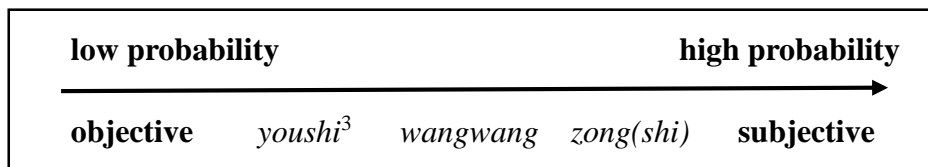
A: you why zong lose mobile phones

B: I only lose twice how come thus zong LE

A: Why did you always lose mobile phones?

B: I only lost them twice. How come *Zong*?

This shows that the probability value denoted by *Zong(shi)* can cover a wide range. It can be very low (usually connected to negative emotions) and very high (very close to 1 to denote quasi-universal quantification). At the same time, *Zong(shi)* is more subjective than *Wangwang*, since the baseline of *Zong(shi)* can be determined by the speaker. Apparently, the degree of subjectivity might be correlated with the probability value an adverb denotes. The higher probability value it denotes, the more subjectivity it has.



### 3.5 Subjective adverbs vs. objective adverbs

As we have argued, the essential meaning of *Wangwang* is to denote a probability which has surpassed a normal baseline accepted by the majority of people. On the contrary, the main function of *Changchang* is to describe the objective frequency of an event. From this perspective, *Changchang* is part of the proposition with the function of a modifier or quantifier, such as

<sup>3</sup> We will illustrate the probability use of *Youshi* in Chapter 4.

(37) – (38).

(37) 上個星期我接到匿名電話。

shangge xingqi wo jiedao niming dianhua.

last week I receive anonymous calls

‘I received anonymous calls last week.’

(38) 上個星期我常常接到匿名電話。

shangge xingqi wo changchang jiedao niming

last week I often receive anonymous

dianhua.

calls

‘I often received anonymous calls last week.’

The main function of *Changchang* in (38) is to restrict the predicate by describing the frequency of the event. It means that the event (*receiving anonymous calls*) happened for many times within the time frame of last week. On the other hand, the function of *Wangwang* is to indicate a high probability of the whole proposition, and is not modifying the predicate in terms of frequency.

(39) 學生學了數年英語，卻聽不懂、說不出。

xuesheng xue le shu nian yingyu,

students learn LE several years English

que tingbudong, shuobuchu.

but not understand not speak



‘The students cannot speak or understand English after learning it for several years.’

(40) 學生學了數年英語，卻往往聽不懂、說不出。

xuesheng xue le shu nian yingyu, que wangwang

students learn LE several yearsEnglish but usually

tingbudong, shuobuchu.

not understand not speak

‘The students usually cannot speak or understand English after learning it for several years.’

Apparently, *Wangwang* is not part of the proposition, but creates a new proposition indicating a high probability.

We will explore the syntactic positions of these two adverbs. Several tests will be adopted, including the linear order with negation, other types of adverbs or adjuncts, modals, etc.

### 3.5.1 Negation

There are plenty of research on the syntactic positions of negation (Ernst 1995; Yuan 2000; Hu 2007; Tsai 2010; Chen, Lee & Pan 2013). According to Tsai (2010), the negation word ‘*mei(you)*’ is related to tense and aspect, thus tied with the head of TP, and can only have a position below epistemic modals. On the other hand, the negation word ‘*bu*’ is free in distribution, and it can be above or below the epistemic modals. The data show that no matter which

negation word is used, *Wangwang* can only appear before the negation word, whereas *Changchang* is not subject to this restriction.

(41) 他生病時常常/往往沒按時吃藥。

ta shengming shi changchang/wangwang mei

he be sick when often/usually not

anshi chi yao.

on time take pills

‘He often doesn’t take pills on time when he is sick.’ or ‘He usually doesn’t take pills on time when he is sick.’

(42) 他出差沒有常常/\*往往給女兒帶禮物。

ta chuchai meiyou changchang/wangwang gei nǚer

he on business not often/usually to daughter

dai liwu.

bring present

‘He doesn’t often bring presents to his daughter when on business trips.’

(43) 他週末常常/往往不出門。

ta zhoumo changchang/wangwang bu chumen.

he weekends often/usually not go out.

‘He often doesn’t go out during the weekends.’ or ‘He usually doesn’t go out during the weekends.’

(44) 他週末不常常/\*往往出門。

ta zhoumo bu changchang/wangwang chumen.

he weekends not often/usually go out

‘He doesn’t often go out during the weekends.’ or ‘He usually doesn’t go out during the weekends.’

### 3.5.2 Other types of adverbs or adjuncts

The second piece of evidence comes from their linear order with other adverbs or adjuncts, including adjuncts about *time*, *location* or *manner*, as well subject-oriented adverbs.

*Changchang* is relatively free in linear order with adjuncts or adverbs, since it can appear before the adjuncts of time, location and manner, as shown by examples of (45) – (47).

(45) 我們常常在週末陪老人健身。

women changchang zai zhoumo pei laoren

we often on weekends accompany the elderly

jianshen.

do exercise

‘We often accompany the elderly to do exercise on weekends.’

(46) 引進的人才常常在單位叫苦連天。

yinjin de rencai changchang zai danwei jiaokuliantian.

import DE talents often at workplace complain a lot

‘The imported talents often complain a lot at workplace.’

(47) 他常常開車到上海去為客戶挑選家具。

ta changchang kaiche dao Shanghai qu wei kehu

he often drive to Shanghai go for clients

tiaoxuan jiaju.

choose furniture

‘He often drives to Shanghai to choose furniture for the clients.’

*Changchang* can also appear after these elements, as (48) – (49) demonstrate.

(48) 小麗在家裡常常挨打，非常痛苦。

xiaoli zai jiali changchang aida, feichang kelian.

xiaoli at home often get beaten quite suffering

‘Xiaoli often gets beaten and suffers a lot at home.’

(49) 清湖站週末常常出現擁堵狀況。

qinghu zhan zhoumo changchang chuxian yongdu

qinghu station weekend often arise crowded

zhuangkuang.

situations

‘Qinghu station is often crowded at weekends.’

*Wangwang* usually appears before the adjuncts indicating time, location and manner.

(50) 往往第二天再來看時，地上的垃圾已經不見了。

wangwang diertian zai lai kan shi,

usually the next day again come see when

dishang de laji yijing bujian le.

floor DE rubbish already gone LE

‘It is usually the case that the rubbish on the floor is gone when you come to see it the next day.’

(51) 嫁、娶等一系列活動往往在家裡舉行。

jia ju deng yi xilie huodong wangwang zai

marriage etc. a series activities usually at

jiali juxing.

home held

‘A series of activities including marriage are usually held at home.’

(52) 他往往很少與大人進行情感上的交流。

ta wangwang henshao yu daren jinxing qinggan

he usually seldom with parents have emotional

shang de jiaoliu.

on DE exchange

‘He usually seldom has any emotional exchange with his parents.’

In contrast, there is no case in which *Wangwang* is used after these elements.

The linear order of certain adverbs, such as subject-oriented adverb, has a similar distribution like these adjuncts, with *Wangwang* only appearing before the adverb, but not the other way around. However, *Changchang* has

a free distribution.

- (53) a. 每次談到這個問題，他常常故意裝作聽不懂的樣子。

mei ci tandao zhege wenti, ta  
every time talking about this issue he  
changchang guyi zhuangzuo tingbudong de  
often deliberately pretend not understand DE  
yangzi.

appearance

‘Every time this issue was being discussed, he often pretended not to understand it deliberately.’

- b. 每次談到這個問題，他故意常常裝作聽不懂的樣子。

mei ci tandao zhege wenti, ta  
every time talking about this issue he  
guyi changchang zhuangzuo tingbudong  
deliberately often pretend not understand  
de yangzi.

DE appearance

‘Every time this issue was being discussed, he often pretended not to understand it deliberately.’

- (54) a. 許多不良商家發貨時往往故意刁難消費者。

xuduo buliang shangjia fahuo shi  
many bad sellers deliver the goods when

wangwang guyi diaonan xiaofeizhe.

usually deliberately create difficulties customers

‘Many bad seller usually deliberately create difficulties for the customers when delivering the goods.’

b. \*許多不良商家發貨時故意往往刁難消費者。

xuduo buliang shangjia fahuo shi

many bad sellers deliver the goods when

guyi wangwang diaonan xiaofeizhe.

deliberately usually create difficulties customers

‘Many bad sellers usually deliberately create difficulties for the customers when delivering the goods.’

Adverbs which can appear before *Wangwang* are quite limited, mainly epistemic adverbs.

(55) 我們看到的現象可能往往是片面的。

women kandao de xianxiang keneng wangwang shi

we see DE phenomena perhaps usually is

pianmian de.

one-sided SFP

‘The phenomena we see are usually one-sided.’

(56) 就算再難，他們也會往往憑藉堅強的毅力堅持下去。

jiusuan zai nan, tamen ye hui wangwang

no matter how difficult they still will usually

pingjie jianqiang de yili jianchi xiaqu.

rely on hard DE will stick to it on

‘No matter how difficult it is, they will usually stick to it relying on strong will.’

Sometimes, the same adverb can both precede and follow *Wangwang*, but they have different properties in different positions, as in (57) and (58).

(57) 有些畫家也往往採用這種畫法。

youxie huajia ye wangwang caiyong zhezhong huafa.

some painters also usually use this way painting

‘It is also the case that some painters usually use this way of painting.’

(58) 有些畫家往往也採用這種畫法。

youxie huajia wangwang ye caiyong zhezhong huafa.

some painter usually also use this way painting

‘It is usually the case that some painters also use this way of painting.’

In sentences (57) and (58), the adverb ‘*ye*’ has different syntactic positions, thus showing different properties. In (57), the adverb ‘*ye*’ has scope over the entire sentence, and thus has scope over the subject. While the ‘*ye*’ in (58) only has scope over the elements following it, exhibiting the property of modifier of the predicate.

### 3.5.3 Modals

Another piece of evidence comes from the linear order of the two



adverbs with modals. It is generally agreed that a dynamic modal occupies the lowest level of the clausal structure, taking VP as complement (Tsai 2010). Taking ‘*neng*’ with a dynamic reading as an example here, it has a different linear order with *Changchang* and *Wangwang*, and shows that the two have different syntactic positions.

- (59) 遇到困難時，他常常/往往能保持理智，尋找解決的辦法。
- yudao      kunan      shi,      ta   changchang/wangwang  
 encounter   difficulties   when   he   often/usually  
 neng   baochi   lizhi,      xunzhao   jiejie   de   banfa.  
 can   stay   rational   seek   solve   DE   ways  
 ‘He often/usually can stay rational and look for ways to solve the  
 problems when encountering difficulties.’

- (60) 遇到困難時，他能常常/\*往往保持理智，尋找解決的辦法。
- yudao      kunan      shi,      ta   neng  
 encounter   difficulties   when   he   can  
 changchang/wangwang   baochi   lizhi,      xunzhao   jiejie  
 often/usually      stay   rational   seek   solve  
 de   banfa.  
 DE ways  
 ‘He can often stay rational and look for ways to solve the problem  
 when encountering the difficulties.’

The data above shows that *Wangwang* can only precede the dynamic

modal while *Changchang* is free of such restriction. In a sense, this proves that *Changchang* has a characteristic similar to a modifier or adjunct appearing at the lowest VP level.

### 3.5.4 Entire VP acting as the subject or object

Given the evidence, it seems that *Changchang* is a VP-level modifier or adjunct, whereas *Wangwang* is in a position above this level. It is reasonable, then, to assume that *Changchang* can be used as part of a VP functioning as the subject/topic or object of the sentence, while *Wangwang* is unacceptable in such situations. The data confirm the hypothesis.

(61) [常常/\*往往跑跑步啊]<sub>TOPIC/SUBJECT</sub>, 有利於身體健康。

changchang/wangwang paopaobu a, youli yu  
 often/usually run SFP beneficial to  
 shenti jiankang.  
 physical health

‘It is beneficial to one’s health to run frequently.’

(62) 保持年輕需要[常常/\*往往擁有一個好的心態]<sub>OBJECT</sub>。

baochi nianqing xuyao changchang/wangwang yongyou  
 remain juvenile need often/usually have  
 yige hao de xintai.  
 a good DE mentality

‘In order to remain juvenile, one needs to have a good mentality

often.’

Based on the above tests, including negation, other types of adverbs or adjunct, as well as modals, we come to the conclusion that *Changchang* and *Wangwang* behave quite differently in syntax, in addition to the distinct meanings they represent. According to the analysis in Chapter 1, *Changchang* should be categorized as a purely temporal adverb or frequency adverb, more or less having the same status with *Yizhi*, whereas *Wangwang* occupies a higher position in the clause, showing properties of an epistemic adverb or speaker-oriented adverb. Their behaviors provide another proof for the inner and outer adverbial distinction among quantifying adverbs in Mandarin Chinese.

### **3.6 Summary**

This chapter investigates the different quantificational uses of *Changchang* and *Wangwang*. Starting with the so-called pre-condition requirement of *Wangwang*, we propose that the essential meaning of *Wangwang* is to denote probability, in contrast with the pure frequency reading of *Changchang*. Given the probability analysis, a lot of related problems can be solved. We compare the probability uses of *Zong(shi)* and *Wangwang* with regard to baseline setting and suggest that *Zong(shi)* is more subjective. We provide syntactic evidence showing that *Changchang* and *Wangwang* appear at different levels of the clause and should be classified

into different categories. *Wangwang* should be categorized as epistemic adverbs or speaker-oriented adverbs with the status of an outer adverbial.

In addition to the requirement as a probability expression, some common sense or world knowledge is also involved when using *Wangwang*, which affects the acceptance of the sentences as well.

(63) a. 高房子往往很涼快。

gao fangzi wangwang hen liangkuai.

high buildings usually very pleasantly cool

‘High buildings are usually pleasantly cool.’

b. ??房子往往很涼快。

fangzi wangwang hen liangkuai.

buildings usually very pleasantly cool

‘Buildings are usually pleasantly cool.’

c. 房子往往是方形的。

fangzi wangwang shi fangxing de.

buildings usually be square DE

‘Building are usually square.’

(64) a. 藝術家往往很敏感。

yishujia wangwang hen mingan.

artists usually very sensitive

‘Artists are usually sensitive.’

b. ??人往往很敏感。

ren wangwang hen mingan.

people usually very sensitive

‘People are usually sensitive.’

c. 人往往是自私的。

ren wangwang shi zisi de.

people usually be selfish DE

‘People are usually selfish.’

Even though these examples satisfy the syntactic requirements, they have different degrees of acceptance due to some world knowledge. Obviously, some background knowledge also plays an important role here.

The discussion in this chapter provides an answer to the first question we raise. It is the probability reading of *Wangwang* that determines the two sets requirement in the sentence. As for the second question why *Wangwang* is incompatible with subjective intention or future contexts, we believe it is attributed to its subjective feature. The commitment to the truth of the proposition is a characteristic of the subjective adverb, which clashes with the property of non-veridical contexts semantically. We will propose an alternative way to solve this problem in Chapter 5.

## Chapter 4 *Ouer* and *Youshi*

This chapter examines another pair of quantifying adverbs: *Ouer* ('occasionally') and *Youshi* ('sometimes'). We believe the distinction reflected here provides another piece of evidence for the probability-frequency, subjective-objective divisions among quantifying adverbs in Mandarin Chinese. This chapter consists of the following sections. In Section 1, evidence is provided to show that *Youshi* follows a similar pattern with *Zongshi* and *Wangwang* in syntactic distributions and occupies a higher level in the clause. It is pointed out in Section 2 that *Ouer* can have either a frequency or relational reading, whereas *Youshi* can only be interpreted as relational. Additional data are shown that not all of the uses of *Youshi* are correlated with events. It is proposed in Section 3 that the essential meaning of *Youshi* is probability, and from this perspective, a lot of related distributional differences can be accounted for. It is suggested in Section 4 that *Youshi* and *Ouer* actually have different scopes, although they are interchangeable in certain contexts. Section 5 is the summary.

### 4.1 Syntactic distributions

*Ouer* and *Youshi* are also termed temporal adverbs or frequency adverbs in the literature (Lu & Ma 1999; Y.-S Zhang 2004, 2014), or more accurately to be adverbs of low frequency (X.-B Zhou 1999; J.-S Shi 2004). In dictionaries like '*Xiandai Hanyu Cidian*' (現代漢語詞典) or '*Xiandai Hanyu*

*Babaici*' (現代漢語八百詞), they are annotated with similar expressions. Namely, both of them are annotated with '*Jianhuo*' (間或), '*Youshihou*' (有時候)<sup>4</sup>. In the literature, some scholars point out that *Youshi* is higher in terms of frequency value than *Ouer* (X.-B Zhou 1999), but this subtle semantic difference is not enough to account for the distinctions we have noticed. In fact, we will provide more evidence showing that these two adverbs behave quite differently in syntax and semantics, and should be categorized as two types of adverbs as well.

In this section, we will prove that syntactically, *Youshi* occupies a higher position in the clause, in contrast with the VP modifier or adjunct status of *Ouer*. Similar syntactic tests are adopted, including the linear order with modals, other types of adverbs, as well as syntactic distributions and co-occurrence of these two adverbs. All the evidence proves that *Youshi*, *Wangwang* and *Zong(shi)* have similar syntactic status.

#### 4.1.1 Modals

When co-occurring with modals, *Youshi* can only precede the modals, while *Ouer* is acceptable preceding or following them.

(1) 不相干的職業有時能/ (\*能有時) 組合成為一種新的職業。

buxianggan de zhiye      youshi      neng      zuhe

---

<sup>4</sup> In addition to the frequency use as an adverb, *Ouer* in Mandarin Chinese can also be interpreted as an adjective denoting the accidental property. In the discussion in this chapter, I only consider its adverb use.

irrelevant DE occupations sometimes can combined

chengwei yi zhong xin de zhiye.

become a kind new DE profession

‘Irrelevant occupations sometimes can be combined to become a new profession.’

(2) 中國農業的發展能力有時會 (\*會有時) 超出人們的想象。

zhongguo nongye de fazhan nengli youshi

China agriculture DE development ability sometimes

hui chaochu renmen de xiangxiang.

will go beyond people DE imagination

‘The potential of China’s agriculture sometimes will go beyond people’s imaginations.’

(3) 這些典籍在別的圖書館或者個人藏書中也能偶爾 (偶爾能) 找到一些。

zhexie dianji zai bie de tushuguan huozhe geren

these classics in other DE libraries or personal

cangshu zhong ye neng ouer pengshang

collections among also can occasionally found

yixie.

some

‘These classics can also be occasionally found in other libraries or personal collections.’



(4) 沙漠中也會偶爾（偶爾會）出現降雨天氣。

shangmo    zhong   ye    hui    ouer  
desert    in    also    will    occasionally  
chuxian    jiangyu   tianqi.  
appear    rainfall   weather

‘There will also be occasional rainfall in the desert.’

#### 4.1.2 Other adverbs

The second piece of evidence comes from the linear order of these two adverbs with other types of adverbs, including speaker-oriented adverbs and some connective adverbs.

When co-occurring with the typical subject-oriented adverb ‘*guyi*’ in Mandarin Chinese, *Ouer* can both precede and follow it, while *Youshi* can only precede it.

(5) 為了給老闆面子，下棋的時候他故意偶爾（偶爾故意）走錯幾步棋。

weile    gei    laoban   mianzi,   xiaqi    de   shihou   ta  
in order to   save   boss   face   play chess   DE when   he  
guyi    ouer    zoucuo   jibuqi.  
deliberately    occasionally    make some wrong moves

‘In order to save the boss’s face, he deliberately occasionally made some wrong moves.’

(6) 為了給老闆面子，下棋的時候他有時故意 (\*故意有時) 走錯幾步棋。

weile        gei        laoban    mianzi, xiaqi        de    shihou    ta  
in order to   save    boss    face    play chess    DE when    he  
youshi        guyi                    zoucuo    jibuqi.  
sometimes    deliberately        make some wrong moves

‘In order to save the boss’s face, he sometimes deliberately made some wrong moves.’

Some other adverbs also show similar pattern in linear order with these two adverbs, such as connective adverb ‘*ye*’ (also) and ‘*hai*’ (still).

(7) 在解決問題時，兒童有時還 (\*還有時) 需藉助直觀形象的幫助。

zai    jiejie    wenti        shi,        ertong    youshi        hai  
at    solve    problems    when    children sometimes    still  
xu        jiezh    zhiguan    xingxiang    de        bangzhu.  
need    by        visual    images        DE        favor

‘When solving problems, children are sometimes still in need of the favor of visual images.’

(8) 普通中小學有時也 (\*也有時) 進行一些職業教育。

putong        zhongxiaoxue                    youshi        ye  
ordinary        primary and middle school    sometimes    also  
jinxing        yixie    zhiye        jiaoyu.  
provide        some    vocational    education

‘Ordinary primary or middle school sometimes also provide some vocational education.’

(9) 除了日常的寫作，他還偶爾（偶爾還）寫些隨筆和讀書筆記。

chule                      richang de xiezuo, ta    hai        ouer  
in addition to    daily    DE writing he also    occasionally  
xie    xie    suibi                      he    dushu    biji.  
write    some    informal essays and    book    reviews

‘In addition to the daily writings, he also occasionally wrote some informal essays and book reviews.’

(10) 鄰居們常常來串門，我也偶爾（偶爾也）出去走走。

linju men    changchang lai    chuanmen, wo ye  
neighbors    often              come    visit              I    also  
ouer              chuqu    zouzou.  
occasionally go out    for a walking

‘The neighbors often come to visit me, and I also occasionally go out for a walking.’

#### 4.1.3 Other syntactic properties

*Youshi* cannot be used as part of a VP functioning as the subject or object of a sentence, while *Ouer* can do so, as the following examples demonstrate.

##### 4.1.3.1 Entire VP with *Ouer* functioning as subject

(11) [偶爾/\*有時健身]<sub>SUBJECT</sub> 等於暴飲暴食，會對身體造成傷害。

ouer            jianshen            dengyu            baoyinbaoshi,  
 occasionally   having exercise   equal to            engorgement  
 hui    dui shenti            zaocheng    shanghai.  
 will   to   physical health   bring            damage  
 ‘Occasionally having exercise equals to engorgement and will  
 bring damage to physical health.’

- (12) [偶爾/\*有時吃些粗糧]<sub>SUBJECT</sub> 對人體是有益的。

ouer            chi            xie            culiang            dui renti  
 occasionally have   some   coarse grain            to health  
 shi youyi            de.  
 is   beneficial            SFP

‘Occasionally having some coarse grain is beneficial to health.’

#### 4.1.3.2 Entire VP with *Ouer* functioning as the object

- (13) 遊艇、帆板等活動對於有些人只是[偶爾/\*有時嘗個新鮮]<sub>OBJECT</sub> 罷了。

youting, fanban            deng    huodong    duiyu    youxie  
 yacht    sailboard    etc    activities    to    some  
 ren            zhishi    ouer            chang ge    xinxian ba            le.  
 people    just are   occasionally to taste            new            only SFP

‘For some people, yachting and sailboarding are just occasionally  
 to taste something new.’

- (14) 她喜歡[偶爾/\*有時約上幾個朋友一起去看電影]<sub>OBJECT</sub>。

ta xihuan ouer yueshang jige pengyou

she like occasionally invite some friends

yiqi qu kan dianying.

together go to see a movie

‘She likes to invite some friends to see a movie together

occasionally.’

#### 4.1.4 Co-occurrence

Another piece of evidence comes from the co-occurrence of these two adverbs. The sequence is fixed, with *Youshi* preceding *Ouer* only, but not the other way around.

- (15) 有時，在忙碌的生活里偶爾來一次旅行，能極大緩解各種壓力。

youshi, zai manglu de shenghuo li

sometimes, in busy DE life in

ouer lai yici lüxing, neng jida huanjie

occasionally come once trip can greatly relieve

gezhong yali.

various pressure

‘Sometimes, occasionally taking a trip in the busy life can greatly

relieve pressure.’

- (16) \*偶爾，在忙碌的生活里有時來一次旅行，能極大緩解各種

壓力。

ouer,           zai manglu de   shenghuo li lai    yici  
occasionally   in   busy    DE life    in   come   once  
luxing,    neng    jida    huanjie gezhong    yali.  
trip        can    greatly relieve various    pressure

Based on the evidence above, it is clear that the syntactic distributions of *Youshi* are more restricted than *Ouer*. It can only precede the modals, other types of adverbs, and cannot be used as part of a VP functioning as the subject or object of a clause. On the other hand, *Ouer* is free in such cases. What is more, when they co-occur, the only acceptable pattern is for *Youshi* to precede *Ouer*, but not vice versa. These facts could be explained if it is assumed that the syntactic position of *Youshi* is higher than *Ouer*, and *Youshi* is at a higher level in the clause. From this perspective, *Youshi* is similar to *Wangwang* and *Zong(shi)* in syntactic distributions. All of them have the properties of outer adverbials.

It is necessary to point out that the syntactic tests only provide indirect evidence. The reason why *Zong(shi)*, *Wangwang* should be termed as speaker-oriented adverb or epistemic adverbs is attributed to the basic meaning they denote. Both of them are probability expressions and closely related to the subjective judgment of the speaker. There are other types of elements which also appear at high levels of the clause, such as temporal elements functioning as the sentential adverbials, but they are different from *Zong(shi)*, *Wangwang*

in that they are irrelevant to the speaker's judgment. We will argue in the following that the essential meaning of *Youshi* is a probability expression as well, whereas *Ouer* only indicates pure frequency.

#### 4.2 Pure frequency reading and relational reading

de Swart (1993) proposes two kinds of readings in the study of adverbs of quantification: *pure frequency reading* and *relational reading*. The pure frequency reading (also called *non-relational reading*) operates on one set of events, and simply describes the event in question as recurring with a certain frequency. On the other hand, relational reading is to establish a relation between two sets of events. For instance, 'often' in English can be interpreted with both pure frequency reading and relational reading, depending on how many event sets appearing in the sentence.

(17) When he gets up late, Paul often has a headache.

(18) Paul often has a headache.

We notice that *Ouer* can be interpreted with both pure frequency reading and relation reading, whereas *Youshi* is only acceptable with the second one.

(19) 他偶爾去健身房。(pure frequency reading)

ta ouer qu jianshenfang.

he occasionally go to the gym

'He occasionally goes to the gym.'

(20) 我們週末偶爾去野餐。(relational reading)

women zhoumo ouer qu yecan.

we weekends occasionally go a picnic

‘We occasionally have a picnic on weekends.’

- (21) \*他有時去健身房。 (\*pure frequency reading)

ta youshi qu jianshenfang.

he sometimes go to the gym

- (22) 我們週末有時去野餐。 (relational reading)

women zhoumo youshi qu yecan.

we weekends sometimes go a picnic

‘We sometimes have a picnic on weekends.’

It seems reasonable to assume that *Ouer* has a wider distribution than that of *Youshi*, but the actual situation is more complex and the data show that not all instances of *Youshi* are interchangeable with *Ouer*, as the following examples demonstrate.

- (23) 這些文字的線條有時/\*偶爾只勾勒出大體的輪廓。

zhexie wenzi de xiantiao youshi/ouer

these character DE lines sometimes/occasionally

zhi goule chu dati de lunkuo.

only sketch out rough DE outline

‘The lines of these characters sometimes only sketch out the outline.’

- (24) 真正的積極有時/\*偶爾是一種無為。

zhenzheng de jiji youshi/ouer shi



real DE positiveness sometimes/occasionally is  
yizhong wuwei.  
a kind of inaction

‘Real positiveness is sometimes inaction.’

(25) 研究者的行為，有時/\*偶爾會對被試起到暗示作用。

yanjiuzhe de xingwei, youshi/ouer hui  
researcher DE behaviors sometimes/occasionally will  
dui beishi qidao anshi zuoyong.  
to the participants play hit a role

‘The behaviors of the researcher sometimes provide hint to the participants.’

Firstly, all the above sentences are to express a certain kind of principle or regularity instead of counting the actual frequency of certain events. They are law-like expressions and express generalizations that are not temporary or limited to a certain period of time (Cohen 2004).

Secondly, according to the binary of interpretations of quantifying adverbs, the actual reading depends on the number of event sets. No matter which interpretation the adverb indicates (*pure frequency reading* or *relational reading*), both of them are closely related to the number of relevant events. However, it is important to notice that the proposition of examples (23) – (25) is irrelevant to particular events, thus not forming event sets. What sentences (23) – (25) express are some properties of individuals. There are

sets involved here, but they are no longer event sets, but are set and sub-set of some individuals. Taking (23) as an example, the sentence expresses that ‘among all the character lines, some of them only sketch out the outlines’. Similar interpretations are found in other examples. Sentence (25) means that ‘among all the behaviors of the researcher, some of them provide hint to the participants’.

In the above examples, *Youshi* more or less has the same function as ‘*Youxie*’ (有些) and mainly points to the relation of set and sub-set.

(26) 這些文字的線條有些只勾勒出大體的輪廓。

zhexie wenzi de xiantiao youxie zhi

goule chu dati de lunkuo.

these character DE lines some only

sketch out rough DE outline

‘Some of the lines of these characters only sketch out the outline.’

(27) 研究者的行為，有些會對被試起到暗示作用。

yanjiuzhe de xingwei, youxie hui dui beishi

researcher DE behaviors some will to the participants

qidao anshi zuoyong.

play hint a role

‘Some of the behaviors of the research will provide hint to the participants.’

From this perspective, the previous categorization of *Youshi* as a

temporal or frequency adverb is inaccurate since some of the data are irrelevant to the number of occurrences of a repeating event, thus irrelevant to time or frequency. On the other hand, *Ouer* only represents properties of events and can be considered a pure frequency adverb that mainly denotes the objective frequency of an event within a time frame. *Ouer* is thus only compatible with stage-level predicates, whereas *Youshi* is acceptable with both stage-level and individual-level ones.

### **4.3 *Youshi* as a probability judgment**

Based on the above analysis, we propose that the essential meaning of *Youshi* is to provide a probability judgment, in contrast with the frequency description function of *Ouer*.

*Youshi* can express either conditional probability or relative probability. Different from *Zong(shi)* and *Wangwang*, the baseline of probability for *Youshi* is close to 0. In denoting conditional probability, *Youshi* means that the probability of an event A occurring when another event B has occurred should be above 0 but not too much. It means that the times of event A and event B happen together should be at least one. Taking (22) as an example, it means that the actual time ‘we have a picnic on weekends’ should be at least one, and thus the probability is above 0. In denoting relative probability, *Youshi* means that the cardinality of a subset should be at least 1. For instance, sentence (23) means that the cardinality of the sub-set (*character lines that*

only sketch out the rough outline) should be at least 1 among the set (*character lines*). In this sense, the sentence with *Youshi* gives rise to an existential reading, or forms an existential judgment.

The frequency-probability distinction could account for the phenomena that the two adverbs are not always interchangeable.

Firstly, when the sentences are characterizing sentences or generic statements (Krifka et al 1995), used to denote generalizations or regularities, only *Youshi* can be used, but *Ouer* cannot.

(28) 諮詢者的人格力量有時/\*偶爾比他的專業技能更重要。

zixunzhe de rengeliliang youshi/ouer bi ta  
consultant DE personality sometimes/occasionally than he  
de zhuanye jineng geng zhongyao.  
DE professional skills more important

‘The personality of the consultant is sometimes more important than his professional skills.’

(29) 逆境有時/\*偶爾是對成長的一種幫助。

nijing youshi/ouer shi dui chengzhang de  
adversity sometimes/occasionally is to development DE  
yizhong bangzhu.  
a kind help

‘Adversity is sometimes a help to the development.’

Secondly, the irrelevance to frequency also accounts for the

incompatibility of *Youshi* with phrases indicating the number of the events.

When there is a numeral classifier phrase indicating the approximate number of the event in a sentence, only *Ouer* is acceptable.

- (30) 她們不在一個單位，只是偶爾/\*有時在公眾場合見過幾次而已。

tamen bu zai yige danwei, zhishi

they not in the same company only

ouer/youshi zai gongzhong changhe jian

occasionally/sometimes at public places meet

guo ji ci eryi.

GUO several times just

‘They are not in the same company and only occasionally meet each other several times at public places.’

- (31) 孩子們很少去大城市，偶爾/\*有時去一次，就會被那些五花八門的玩具所吸引。

haizimen henshao qu dachengshi, ouer qu

children seldom go to big cities occasionally go

yici, jiu hui bei naxie wuhuabamen de wanju

once thus will BEI those various DE toys

suo xiyin.

SUO attracted

‘The children seldom go to big cities. They will be attracted by the

various toys when they go there occasionally.’

Thirdly, when the sentence is describing two opposite and complementary types of events with almost the same probability, only *Youshi* is acceptable.

(32) 我們在一起討論國際問題，有時/\*偶爾辯論很激烈，有時  
/\*偶爾議論居然頗一致。

women zaiyiqi taolun guoji wenti,  
we together discuss international issues  
youshi/ouer bianlun hen jilie,  
sometimes/occasionally debate very heated  
youshi/ouer yilun juran po  
sometimes/occasionally comment unexpectedly quite  
yizhi.  
similar

‘We discussed international issues together. Sometimes, the debate was quite heated; sometimes, our comments were unexpectedly quite similar.’

Sentence (32) using *Ouer* is unacceptable mainly because it betrays the quantity and quality maxim of conversation (Grice 1975). As a frequency expression, *Ouer* denotes that the frequency of relevant event is low. But when describing two opposite and complementary events, it is weird to say that the frequencies of the two complementary events are both low. In contrast,

*Youshi* only gives a probability expression and it is reasonable to make a judgment of two opposite and complementary events by stating the probabilities of them are both above 0, or both exist.

The existential judgment expression can sometimes be used to emphasize a special situation, of which there is an adverb ‘*shenzhen*’ (even) to denote the existence of a special case.

- (33) 元朝後期，宰相的權勢越來越大，有時甚至可以左右皇位的繼承。

yuan chao          houqi,    zaixiang          de          quanshi

Yuan dynasty      late      prime minister    DE      power

yuelaiyueda,          youshi          shenzhi          keyi

more and more          sometimes    even          can

zuoyou    huangwei    de          jicheng.

control    throne          DE          inheritance

‘In the late Yuan dynasty, the prime minister could sometimes even control the inheritance of the throne, with the increase of their power.’

- (34) 兩者的租金有很大出入，有時甚至相差幾十倍。

liangzhe          de          zujin          you          henda    churu,

the two          DE          rent          have          huge          gap

youshi          shenzhi          xiangcha    jishi          bei.

sometimes    even          differ    dozens of    times

‘There is a huge gap between the rent of two, sometimes up to dozens of times.’

The probability reading could also account for unacceptability of pure frequency reading of *Youshi* when there is only one set of events occurring (example (21)), because no matter which kind of probability is involved, two sets are the basic requirement.

#### 4.4 Different scopes

It is important to notice that, in some other occasions, although the two adverbs are interchangeable, the respective meaning changes after the replacement.

(35) 公司因為常有加班，所以偶爾晚到幾分鐘也不會扣工資。

gongsi      yinwei      chang      you      jiaiban,  
company      because      frequent      have      overtime work  
suoyi      ouer      wandao      jifenzhong      ye      bu  
so      occasionally being late      several minutes      also      not  
hui      kou      gongzi.  
will      deduct      wages

‘Because of frequent overtime work in the company, being late occasionally for several minutes does not result in deduction of wages.’

(36) 公司因為常有加班，所以有時晚到幾分鐘也不會扣工資。



gongsi      yinwei chang      you      jiban,  
company      because frequent      have      overtime work  
suoyi      youshi      wandao      jifenzhong      ye  
so      sometimes      being late      several minutes      also  
bu      hui      kou      gongzi.  
not      will      deduct      wages

‘Because of frequent overtime work in the company, sometimes  
being late for several minutes does not result in deduction of wages.’

(37) 在恩格斯那裡，偶爾也將歷史科學與自然科學、社會科學相對。

zai Engesi      nali,      ouer      ye      jiang  
at Engels      there      occasionally      also      set  
lishi      kexue      yu      ziran      kexue,      shehui      kexue  
historical      science with      natural      science      social      science  
xiangdui.  
against

‘Engels occasionally also sets historical science against natural  
science and social science.’

(38) 在恩格斯那裡，有時也將歷史科學與自然科學、社會科學相對。

zai Engesi      nali,      youshi      ye      jiang      lishi  
at Engels      there      sometimes      also      set      historical

kexue yu ziran kexue, shehui kexue xiangdui.

science with natural science social science against

‘Engels sometimes also sets historical science against natural science and social science.’

Sentence (35) means that ‘*occasionally being late for several minutes*’ does not result in the deduction of salaries. It is reasonable to infer that if you are late more often, it may result in salary deduction. Whereas for sentence (36), it only indicates that there are such possibilities or rules that ‘*if you are late for several minutes, you won’t get punishment*’. *Youshi* in the sentence does not emphasize the low frequency of the relevant events. This contrast is also reflected in (37) and (38). Sentence (37) means that there are occasional cases for ‘*Engels to take historical science opposed to natural science*’. On the contrary, in sentence (38), *Youshi* does not indicate the low frequency of such cases and mainly denote an existential reading.

In fact, *Ouer* and *Youshi* have different scopes in such cases.

(39) [偶爾[晚到幾分鐘]]也不會扣工資。

ouer wandao ji fenzhong ye bu

occasionally being late several minutes also not

hui kou gongzi.

will deduct salary

‘Being late occasionally for several minutes does not result in salary deduction.’

(40) [有時[晚到幾分鐘也不會扣工資]]。

youshi      wandao      ji      fenzhong      ye      bu  
sometimes   being late   several minutes   also   not  
hui      kou      gongzi.  
will      deduct   salary

‘Being late for several minutes does not result in salary deduction  
sometimes.’

In the above examples, *Ouer* and *Youshi* have different scopes. *Ouer* has scope only over the verbal phrase right to it. The adverb ‘*ye*’ (also) in sentence (39) functions between ‘*occasionally being late for several minutes*’ and ‘*result in wages deduction*’. Whereas in the case of (40), the scope of *Youshi* is the entire sentence right to it, rather than just the verbal phrase. Correspondingly, the adverb ‘*ye*’ (also) functions between ‘*being late for several minutes*’ and ‘*result in wages deduction*’.

The situation is clearer in the following examples.

(41) [偶爾[放鬆一下]]反而可以提高工作效率。

ouer              fangsong      yixia      faner      keyi  
occasionally   relax      once      instead   would  
tigao              gongzuo      xiaolü  
improve      work      efficiency

‘Occasionally having a relaxation would in fact improve work  
efficiency.’

(42) [有時[放鬆一下反而可以提高工作效率]]。

youshi fangsong yixia faner keyi tigao

sometimes relax once instead would improve

gongzuo xiaolü

work efficiency

‘In some cases, having a relaxation would in fact improve work efficiency.’

In sentence (41), *Ouer* only has scope over the verbal phrase ‘*having a relaxation*’. On the other hand, *Youshi* in sentence (42) has scope over the entire clause. This contrast is reflected in the different functions of the adverb ‘*faner*’. In (41), ‘*faner*’ links ‘*occasionally having a relaxation*’ and ‘*improve work efficiency*’. In (42), the adverb links ‘*having a relaxation*’ and ‘*improve work efficiency*’ instead.

What’s more, due to the different scopes, *Youshi* can appear before *Ouer* in (39) and (41) to form a new proposition, with *Youshi* having scope over *Ouer* in such cases.

(43) [有時[偶爾[晚到幾分鐘]]也不會扣工資]。

youshi ouer wandao ji fenzhong

sometimes occasionally being late several minutes

ye bu hui kou gongzi.

also would not deduct wages

‘In some cases, occasionally being late would not result in the

deduction of wages.’

- (44) [有時[偶爾[放鬆一下]]反而可以提高工作效率]。

youshi      ouer              fangsong    yixia    faner  
sometimes   occasionally   relax      once    instead  
keyi      tigao              gongzuo    xiaolü  
would    improve    work        efficiency

‘In some cases, occasionally having a relaxation would in fact improve work efficiency.’

However, *Ouer* cannot have scope over *Youshi* in the corresponding examples.

- (45) \*偶爾有時晚到幾分鐘也不會扣工資。

ouer              youshi      wandao    ji        fenzhong  
occasionally    sometimes   being late   several   minutes  
ye      bu      hui      kou      gongzi.  
also    would   not      deduct   wages

- (46) \*偶爾有時放鬆一下反而可以提高工作效率。

ouer              youshi      fangsong    yixia    faner  
occasionally    sometimes   relax      once    instead  
keyi      tigao              gongzuo    xiaolü  
would    improve    work        efficiency

The conclusion is that *Youshi* is outside the proposition of the clause it appears, while *Ouer* is part of it. *Youshi* can have scope over *Ouer*, but not

vise visa.

#### 4.5 Summary

This chapter investigates another pair of quantifying adverbs in Mandarin Chinese, *Ouer* and *Youshi*. Firstly, *Youshi* appears at a level higher than that of *Ouer*. *Youshi* can only precede modals, other types of adverbs, and shows patterns similar to *Zong(shi)* and *Wangwang*. On the other hand, *Ouer* should be analyzed as modifier or adjunct of VP, and behaves relatively free in distributions. Secondly, it is demonstrated that not all the quantificational uses of *Youshi* are related with time or frequency. This is a challenge to the previous categorization of *Youshi* as a temporal or frequency adverb. We come to the conclusion that *Youshi* is a probability expression with regard to the speaker's judgment. A lot of distributional differences can thus be accounted for. Semantically, only *Youshi* can have scope over *Ouer*, but not the other way around, even though they are interchangeable in certain contexts. This chapter further confirms the probability-frequency, and subjective-objective distinction among quantifying adverbs in Mandarin Chinese.

## Chapter 5 Veridical and non-veridical distributions

This chapter explores the non-veridical contexts constraints on subjective adverbs. The investigations prove that besides *Wangwang*, *Zong(shi)* and *Youshi* are also incompatible with such non-veridical contexts like *negation*, *future tense*, *imperatives*, *modals* and *antecedent of conditionals*. This chapter consists of four sections. Section 1 discusses the basic facts. The facts show that in contrast to objective adverbs *Yizhi*, *Changchang* and *Ouer*, there are certain constraints on subjective adverbs *Zong(shi)*, *Wangwang* and *Youshi* with regard to *negation*, *future tense*, *imperatives*, *modals* and *antecedent of conditionals*. Variations exhibited among different contexts and different adverbs are discussed as well. In Section 2, the theory of non-veridicality proposed by Giannakidou (1999, 2001, 2002, 2006) is introduced and a brief review of related studies is given on interaction between speaker-oriented adverbs and non-veridicality. Section 3 is about the incompatibility of subjective adverbs (*Zongshi*, *Wangwang* and *Youshi*) and non-veridicality, and this is attributed to the semantic clash of non-veridicality and the property of these adverbs. Section 4 is the summary.

### 5.1 Data and problems

There is a consensus in the literature that in addition to the pre-condition requirement of *Wangwang*, there is a distributional difference between *Changchang* and *Wangwang*. *Wangwang* can only be used to describe regular

things based on past experience (Lu & Ma 1999; Ma 2004), and cannot be used to describe future events or subjective intention (Lü 1999), whereas there is no such restriction on *Changchang*, as the following examples demonstrate.

(1) 請你常常/\*往往來。

qing ni changchang/wangwang lai.

please you often/usually come

‘Please come here often.’

(2) 我一定常常/\*往往來。

wo yiding changchang/wangwang lai.

I certainly often/usually come.

‘I will certainly often come.’

(3) 他希望我常常/\*往往去。

ta xiwang wo changchang/wangwang qu.

he expect me often/usually go

‘He expects me to go there often.’

(Examples (1-3) from Lü 1999:548)

(4) 以後週末，你要是沒事，常常/\*往往去看看姥姥。

yihou zhoumo, ni yaoshi meishi, changchang

afterwards weekend you if be free often

qu kankan laolao.

go visit grandma

‘You should often go to visit your grandma on weekends afterwards



if you are free.’

(5) 明年回上海以後，你得常常/\*往往去看看她。

mingnian hui Shanghai yihou, ni de  
next year return Shanghai after you should  
changchang/wangwang qu kankan ta.  
often/usually go visit her

‘You should often go to visit her after you return to Shanghai next year.’

(Examples (4-5) from Ma 2004:210)

In addition to future events, subjective intention or obligation, *Wangwang* is not compatible with some other contexts. These contexts include *negation*<sup>5</sup>, *antecedent of conditionals*, *modals* and *imperatives*, etc.

#### *Negation*

(6) 他出差時沒有常常/\*往往給女兒帶禮物。

ta chuchai shi meiyou changchang/wangwang gei  
he on business when not often/usually for  
nǚer dai liwu.  
daughter bring present

‘He doesn’t often bring presents for his daughter when he is on business.’

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<sup>5</sup> We have discussed the linear order of *Changchang*, *Wangwang* with negation in Section 5 of Chapter 3. The new perspective is that negation is considered as a non-veridical operator here and the data show that *Wangwang* is barred from occurring within the scope of negation.

(7) 他週末不常常/\*往往出門。

ta      zhoumo      bu      changchang/wangwang      chumen.

he      weekends      not      often/usually      go out

‘He doesn’t often go out during the weekends.’

*Antecedent of conditionals*

(8) 要是他周末常常/??往往來香港，我們的交流就更方便了。

yaoshi ta      zhoumo      changchang/wangwang      lai

if      he      weekends      often/usually      come to

xianggang,      women de      jiaoliu      jiu      geng

Hong Kong      our      DE communication      thus      more

fangbian      le.

convenient      LE

‘If he often comes to Hong Kong on weekends, our communication

will be more convenient.’

*Modals*

(9) 他可能常常/??往往來這家餐廳吃晚飯，老闆都認識他了。

ta      keneng      changchang/wangwang      lai      zhejia      canting

he      perhaps often/usually      come      this      restaurant

chi      wanfan,      laoban      dou      renshi      ta      le.

have      dinner      the boss      even      know      him      LE

‘Perhaps he often comes to have dinner at this restaurant, and even

the boss knows him.’

*Imperatives*

(10) 常常/\*往往去看看她!

changchang/wangwang qū kankan ta!

often/usually go visit her

‘Go to visit her often!’

It is important to note that such distributional differences not only exist between *Changchang* and *Wangwang*, but also show up in the other two pairs of quantifying adverbs, *Yizhi* and *Zong(shi)*, *Ouer* and *Youshi*. The data show that *Zong(shi)* and *Youshi* are always unacceptable with the above contexts, whereas their counterparts *Yizhi* and *Ouer* are free in such environments.

*Negation*

(11) 他們雖然沒有一直生活在一起，但是感情很好。

tamen suiran meiyou yizhi shenghuo zaiyiqi,

they although not all the time live together

danshi ganqing henhao.

yet relationship good

‘Although they didn’t live together all the time, their relationship was quite good.’

(12) 思維方式總是沒有 (\*沒有總是) 擺脫政府的框架。

siwei fangshi zongshi meiyou baituo

thinking style always not get rid of

zhengfu de kuangjia.

government DE framework

‘The thinking style does not always get rid of the government’s framework.’

(13)他沒有偶爾/\*有時在父母忙的時候照顧一下妹妹。

ta meiyou ouer/youshi zai fumu mang de  
he not occasionally/sometimes at parents busy DE  
shihou zhaogu yixia meimei.  
when take care of once sister

‘He didn’t occasionally take care of his sister when his parents were busy.’

*Future tense*

(14)在處理相關問題時，中國將來會一直/\*總是發揮積極和建設性的作用。

zai chuli xiangguan wenti shi, zhongguo  
at solving related problems when China  
jianglai hui yizhi/zongshi fahui jiji  
the future will all the time/always play active  
he jianshexing de zuoyong.  
and constructive DE role

‘China will play an active and constructive role when solving related problems all the time in the future.’

(15)我們要去美國了，但以後春節還會偶爾/\*有時回來看看。

women yao qu meiguo le, dan

we will go United States LE but

yihou chunjie hai hui

afterwards Spring Festival still will

ouer/youshi huilai kankan.

occasionally/sometimes come back see

‘We will go to the United States, but we will still occasionally come back during Spring Festival in the future.’

*Intention and obligation*

(16) 我和太太打算一直/\*總是给這個孩子寄钱。

wo he taitai dasuan yizhi/zongshi gei

I and wife plan all the time/always to

zhege haizi jiqian.

this child send money

‘My wife and I plan to send money to this child all the time.’

(17) 你應該偶爾/\*有時放鬆一下，不能這麼沒日沒夜地工作！

ni yinggai ouer/youshi fangsong yixia,

you should occasionally/sometimes relax once

buneng zheme meirimeiye de gongzuo.

can't like this day and night DE work

‘You should occasionally have a relaxation and you can't work day and night like this.’

*Antecedent of conditionals*

(18) 只要他 一直/\*總是保持這樣的狀態，湖人隊就萬事大吉了。

zhiyao ta yizhi/zongshi baochi zheyang de  
as long as he all the time/always keep such DE  
zhuangtai, hurendui jiu wanshidaji le.  
state the Lakers thus be fine LE

‘As long as he keeps such a state all the time, the Lakers will be fine.’

(19) 只要他 偶爾/?有時還能想起我，我已經很滿足了。

zhiyao ta ouer/youshi hai neng  
as long as he occasionally/sometimes still can  
xiangqi wo, wo jiu hen manzu le.  
think of me I thus very satisfied LE.

‘As long as he can still think of me occasionally, I will be very satisfied.’

*Modals*

(20) 人民幣匯率能一直保持穩定。

renminbi huilv neng yizhi baochi  
RMB exchange rate can all the time keep  
wending.  
steady

‘The exchange rate of RMB can keep steady all the time.’

(21) 學歷高的人總是能 (\*能總是) 得到更多的重視。

xueligao        de        ren        zongshi        neng        dedao  
well educated    DE        people    always        can        get  
gengduo        de        zhongshi.  
more        DE        attention

‘Well educated people can always get more attention.’

(22) 我不曾真的忘記，也許我偶爾/?有時還是會想他。

wo        buceng    zhende    wangji,    yexu        wo  
I        never    really    forget    perhaps    I  
ouer/youshi        haishi    hui        xiang        ta.  
occasionally/sometimes    still        will        think of        him

‘I never really forget it, and perhaps I will still think of him  
occasionally.’

### *Imperatives*

(23) 一直/\*總是堅持做!

yizhi/zongshi        jianchi    zuo!  
all the time/always        keep        doing it

‘Keep doing it all the time!’

(24) 累的時候偶爾/\*有時去跑跑步!

lei        de    s        hihou    ouer/youshi        qu  
tired    DE        time    occasionally/sometimes    go to  
paopaobu.

have a jogging

‘Go to have a jogging occasionally when you are tired!’

Based the data demonstrated above, there are two phenomena that should be noticed. First, there are variations in the interaction between these adverbs and the environments. Subjective adverbs *Zong(shi)*, *Wangwang* and *Youshi* are not allowed to co-occur with *negation*, *future tense*, *imperatives*, *intentional verbs*, while they are not strictly prohibited to co-occur with *modals*, *antecedent of conditionals*, such as (8), (9), (19) and (22). Second, there are variations among different subjective adverbs in that the subjectivity decreases from *Zong(shi)* to *Youshi*. The data show that *Wangwang* and *Youshi* are acceptable in some contexts while the cases for *Zong(shi)* are always bad. The basic patterns are demonstrated as follows.

contexts	<i>Negation</i>	<i>Future tense</i>	<i>Intention /obligation</i>	<i>Imperatives</i>	<i>Conditionals</i>	<i>Modals</i>
<i>Yizhi</i>	+	+	+	+	+	+
<i>Zongshi</i>	+/- <sup>6</sup>	-	-	-	-	-
<i>Changchang</i>	+	+	+	+	+	+
<i>Wangwang</i>	-	-	-	-	+/-	+/-
<i>Ouer</i>	+	+	+	+	+	+
<i>Youshi</i>	-	-	-	-	+/-	+/-

There are two main remaining problems here. The first one is how to account for the contexts constraints on the subjective adverbs. The second one is how to account for the variations among different contexts, as well as

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<sup>6</sup> We have argued that *Zong(shi)* can sometimes follow negation, but *Zong(shi)* are always accompanied with adverb ‘*bing*’ in such cases. Analysis in this chapter will account for this phenomenon from another perspective.



differences in acceptability among different subjective adverbs.

## 5.2 (Non)veridicality theory

The proposal is that all the above phenomena can be accounted for within the framework of (non)veridicality theory.

When discussing the sensitivity phenomena of positive and negative polarity items (PPIs and NPIs) in Modern Greek and English, Giannakidou (1999, 2001, 2002, 2006) proposes a (non)veridicality theory. Its main idea is that polarity phenomena result from the interaction of lexical items with operators that either do (veridical) or do not (non-veridical) entail the truth of the proposition. She argues that a propositional operator  $F$  is veridical iff from the truth of  $Fp$  one can infer that  $p$  is true according to some individual  $x$  (i.e. in some individual  $x$ 's epistemic model). If inference of the truth of  $p$  under  $F$  is not possible,  $F$  is non-veridical (Giannakidou 2006:588-589). The basic idea is expressed in the following definitions.

a. A proposition operator  $F$  is veridical iff  $Fp$  entails  $p$ :  $Fp \rightarrow p$ ; otherwise  $F$  is non-veridical.

b. A non-veridical operator  $F$  is anti-veridical iff  $Fp$  entails not  $p$ :  $Fp \rightarrow \neg p$ .

The typical non-veridical operators include *negation*, *volitional verbs*, *modal verbs*, *future tense*, *subjunctive*, *antecedent of conditionals*, *questions* etc., of which *negation* is considered as the anti-veridical operator. Some of

the related English examples are illustrated as follows.

*Negation (anti-veridical)*

(25) George has not gone to the US  $\nrightarrow$  George has gone to the US.

$(Fp \rightarrow \neg p)$

*Volitional verb*

(26) John wants to find a snake.  $\nrightarrow$  John finds a snake.

$(Fp \nrightarrow p)$

*Modal verbs*

(27) John may talk to anyone.  $\nrightarrow$  John talks to someone.

$(Fp \nrightarrow p)$

*Antecedent of questions*

(28) If John has gone to the US, she will be sorry.

If John has gone to the US  $\nrightarrow$  John has gone to the US

$(Fp \nrightarrow p)$

Ernst (2008, 2009) believes that the phenomenon that speaker-oriented adverbs cannot be within the scope of negation can be analyzed based on the non-veridicality theory. The speaker-oriented adverbs could be considered as positive polarity items and represent **a speaker's subjective commitment to the truth of the proposition represented by the adverb** (Bybee and Fleischman 1995; Palmer 2001; Papafragou 2006), which is incompatible with the falsity of the same proposition (non-veridical). The non-veridicality can also account for the usual unacceptability of speaker-oriented adverb in

other contexts, such as questions and antecedent of conditionals, in which the inferences of the truth of propositions are not possible.

### **5.3 Semantic clash of subjective adverbs and non-veridicality**

Zhou (2015) proposes that the distributional differences between *Changchang* and *Wangwang* in certain contexts are attributed to the semantic distinction of realis and irrealis. *Wangwang* is an adverb describing past events, and can thus be considered as realis, whereas *Changchang* is irrealis compatible with future or other irrealis contexts. There are several problems of his arguments. First, it is hard to define *Wangwang* as a realis adverb since *Wangwang* is different from typical realis adverbs like ‘*fortunately*’ in English or ‘*Xingkui*’ (幸虧) in Mandarin Chinese (Huddleston & Pullum 2002; Shen 2000). For example, ‘*Xingkui*’ represents the speaker’s evaluation to a proposition, indicating that the relevant event is a good result, thus should be realis or factive. Any sentence containing such a factive adverb implies the corresponding sentence without the adverb, independently of whether the sentence is a negation or not (Bellert 1977). By contrast, it is difficult to make the same claim for *Wangwang*. As for *Wangwang*, it is neither realis nor irrealis and actually in the middle due to its property of partial commitment, since it only indicates there is a relatively high probability for the proposition to be true, but not for sure.



Furthermore, as we have argued in previous chapter, the essential meaning of *Wangwang* is to denote a probability with regard to the speaker's judgment. The irrealis (non-veridicality) environment constraint is only on the contextual distribution, and cannot be regarded as part of meaning of the adverb itself.

As argued, the essential meaning of adverbs *Zong(shi)*, *Wangwang* and *Youshi* is to denote a probability in terms of the speaker's judgment. It means how likely the proposition described is true. *Zong(shi)* indicates that the probability is quite high and is sometimes close to 1. The probability expressed by *Wangwang* is a little bit lower. *Youshi* means that the relevant probability is above the baseline, which is close to 0, thus giving rise to an existential reading. Put another way, all these subjective adverbs involve the speaker's commitment to the truth of the proposition. Semantically, they are quite alike with speaker-oriented adverbs *definitely*, *probably*, *possibly* etc., and that is why they can be categorized as epistemic adverbs as well.

On the other hand, the degrees of commitment are different among these adverbs. The higher probability the adverb denotes, the more commitment it involves. The probability decreases from *Zong(shi)* to *Youshi*, and thus the related commitment decreases accordingly.

The non-veridical operators include *negation*, *future tense*, *intentional*

*verbs, antecedent of conditionals, modals and imperatives*, etc. The related propositions attached to such operators are classified into four types:

- a. The truth of the proposition is false, such as propositions attached to *negation* operator.
- b. The truth of the proposition cannot be identified, such as propositions attached to operators like *intentional verbs* and *future tense*.
- c. The truth of the proposition is either true or false, such as propositions attached to operators like *modals* and *antecedent of conditionals*.
- d. There is no truth condition for the proposition, such as proposition attached to operator like *imperatives*<sup>7</sup>.

As we have argued, all the three adverbs *Zong(shi)*, *Wangwang* and *Youshi* denote speaker's commitment to the truth of the proposition. A speaker cannot commit to the truth of the proposition (denoting how likely the proposition to be true) and state that the truth of proposition is false or unidentified or without truth conditions at the same time. For example, the proposition of sentence (7) using *Wangwang* (repeated as (29)) without non-veridical operator 'bu' is 'He usually goes out on weekends'. *Wangwang* in the proposition is to give a probability judgment, denoting the probability of

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<sup>7</sup> The meaning of *imperatives* is to denote a speech act or command and cannot rely on truth conditions.

‘his going out on weekends’ is high. In a sense, *Wangwang* indicates the likelihood of the truth of the proposition represented by the adverb. However, the proposition attached to negation is false, meaning ‘*He usually goes out on weekends*’ is false. A speaker cannot commit to the truth of the proposition with a high probability (partial commitment) and falsify the same proposition.

(29) \*他週末不往往出門。

ta      zhoumo      bu      wangwang      chumen.

he      weekends      not      usually      go out

Similar analysis also applies to other examples. The proposition of sentence (16) using *Zongshi* (repeated as (30)) without intentional verb ‘*dasuan*’ (plan) is ‘*My wife and I always send money to the child*’. *Zongshi* denotes that there is a high probability for the proposition represented by the adverb to be true from the speaker’s perspective, but the truth of the proposition attached to intentional verb cannot be identified. A speaker cannot commit himself to the truth of the proposition and state that the truth of the proposition is undefined at the same time.

(30) \*我和太太打算總是給這個孩子寄錢。

wo      he      taitai      dasuan      zongshi      gei      zhege

I      and      wife      plan      always      to      this

haizi      jiqian.

child      send money

The essential property of these adverbs causes semantic clash with such

non-veridical operators.

At the same time, variations among different adverbs and different contexts could be accounted for. Because of partial commitment to the truth of the proposition, *Youshi* and *Wangwang* can be used in some non-veridical contexts, such as (8), (9), (19) and (22), but they can only be used with *modals*, *antecedent of conditionals*, in which the truth of the propositions can be either true or false. For operators like *negation*, *future tense*, *intentional verb* or *imperatives*, of which the truth of the proposition is false or cannot be identified or without truth-value, the subjective adverbs are strictly barred.

Now we can also give an account for the phenomenon that sometimes *Zong(shi)* can follow the negation word ‘*bu*’, which seems to be an exception to the semantic clash. We have argued that the pattern ‘*buzong(shi)*’ always accompanies with the connective adverb ‘*bing*’ and we propose that ‘*bing*’ can only be used when there is a background proposition. As an epistemic adverb, ‘*bingbu*’ is used to deny the hearer’s belief or the speaker’s original ideas towards the proposition, instead of negating the proposition *Zong(shi)* appears.

(31) 中國的巨大變革並不總能保證各方面得到改善。

zhongguo	de	juda	biange	bing	bu	zong
China	DE	significant	change	BING	not	zong
neng	baozheng	ge	fangmian	dedao	gaishan.	
can	ensure	various	aspects	get	improved	

‘China’s significant changes cannot always ensure the improvements of various aspects.’

That is to say, the function of ‘*bingbu*’ is irrelevant to the negation of the proposition and thus irrelevant to non-veridicality, therefore, there is no semantic clash in these examples.

#### **5.4 Summary**

This chapter mainly focuses on the incompatibility of subjective adverbs with non-veridical contexts. We have two questions based on the basic facts. We propose that the phenomena can be accounted for within the framework of non-veridicality theory. The incompatibility of subjective adverbs and non-veridical contexts is attributed to the semantic clash of non-veridicality and the essential meaning of these adverbs. The semantic approach explanation can also account for variations among different semantic contexts, as well as different degrees of acceptance within subjective adverbs. We prove that the semantic clash should be regarded as a side effect of the property of these subjective adverbs and veridicality (*realis*) cannot be considered as part of meaning of the adverbs themselves.



## Chapter 6 Conclusion

A major issue in the study of quantifying adverbs is the object of quantification, i.e. what adverbs of quantification actually quantify over. There are many solutions (Lewis 1975; de Swart 1993; Fintel 2004). The main problem of those solutions is that all of these quantifying adverbs are grouped together and thus it is difficult to give a unified account for their essential meanings due to their internal variations. Based on large corpora, we propose that quantifying adverbs in Mandarin Chinese can be further sub-categorized into two types depending on the essential meanings they denote. The first type is objective quantifying adverbs denoting pure quantity that involves a time length or frequency, including *Yizhi*, *Changchang*, and *Ouer*. The other type is subjective quantifying adverbs denoting probability. The second type of adverbs include *Zong(shi)*, *Wangwang* and *Youshi*. Based on the essential meaning of probability, a lot of related problems can be solved. The division of the two types of adverbs accounts for the first question we propose in Chapter 1, namely, why only some of the quantifying adverbs can be used with an atemporal reading. Other related problems will be solved as well, such as the semantic connections of different senses of *Zong(shi)* in Mandarin Chinese, the so-called pre-condition requirement of *Wangwang*, as well as scope restriction of *Youshi* and *Ouer*. The two sub-categories of quantifying adverbs are illustrated in the following table.

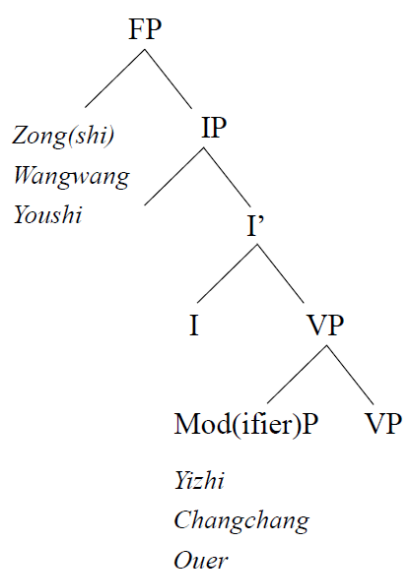
<b>Objective quantification</b>	<b>Subjective statement</b>
<i>Yizhi</i>	<i>Zong(shi)</i>
<i>Changchang</i>	<i>Wangwang</i>
<i>Ouer</i>	<i>Youshi</i>

It is important to note that the objective-subjective dichotomy among these quantifying adverbs could be shown by their syntactic behaviors as well. Objective adverbs have relatively free syntactic distributions. They can both precede and follow negation, modals as well as other adverbs or adjuncts and be used as part of VP functioning as the subject or object of a sentence. However, they must follow subjective adverbs when co-occurring. In contrast with objective adverbs, the syntactic distributions of subjective adverbs are more restricted and mostly they cannot follow certain elements like negation or modals. The related syntactic distributions are summarized in the following.

<b>Syntactic distribution</b>	<b>Following negation</b>	<b>Following modals</b>	<b>Following other Adverbs/adjuncts</b>	<b>Precedes when Co-occur</b>	<b>Acting as subject/object</b>
<i>Yizhi</i>	+	+	+	-	+
<i>Zongshi</i>	-	-	-	+	-
<i>Changchang</i>	+	+	+	-	+
<i>Wangwang</i>	-	-	-	+	-
<i>Ouer</i>	+	+	+	-	+
<i>Youshi</i>	-	-	-	+	-

It is reasonable to assume that adverbs with higher position are more restricted than the lower ones since there is some cross-language evidence for that. As pointed out by Cinque (1999:16-17) and Li et al (2012), not every type of adverb can undergo *wh*-movement, and those which cannot typically occupy higher positions in the clause. Only manner and frequency adverbs in the lower position are cleftable, while evaluative, epistemic adverbs are not.

From this perspective, *Zong(shi)*, *Wangwang*, and *Youshi* should be considered as high-level adverbs and categorized as epistemic adverbs or speaker-oriented adverbs taking scope over IP, whereas *Yizhi*, *Changchang*, and *Ouer* are purely temporal adverbs or frequency adverbs acting as VP modifiers or adjuncts.



The essential meaning of *Zong(shi)*, *Wangwang* and *Youshi* as epistemic adverbs or speaker-oriented adverbs is that they all represent the speaker's subjective commitment to the truth of the proposition represented by the adverb (Ernst 2007, 2009). The essential meaning accounts for the phenomena that these adverbs are always incompatible with non-veridical contexts. According to Giannakidou (1999, 2001, 2002, 2006), a propositional operator *F* is non-veridical iff inference of the truth of *p* under *F* is not possible. Since adverbs like *Zong(shi)*, *Wangwang*, and *Youshi* all represent some degree of commitment to the truth of the proposition, semantic clash will arise when they appear in the non-veridical contexts. The

(non)veridical context constraint is only a side-effect of the property of subjective adverbs and veridicality (*realis*) cannot be considered as part of the meaning of these adverbs.

It is necessary to point out the correlation of the two dimensions in the dissertation. As for the distinction of frequency vs. probability, it mainly concerns the essential meanings of each pair of adverbs, while for the objective vs. subjective distinction, it mainly focuses on the syntactic positions of each pair of adverbs. At the same time, they are closely related with each other, the essential meaning of *Zongshi*, *Wangwang* and *Youshi* all denote a probability in terms of the speaker's judgment, and semantically, they are beyond the proposition. They can be termed as epistemic adverbs or speaker-oriented adverbs, since they represent the speaker's subjective commitment to the truth of the proposition, meaning how likely the proposition described to be true. Syntactically, it is assumed that the more subjective one adverb is, the higher position it occupies in a clause. Evidence is provided to show that the probability adverbs actually occupy higher positions in a clause, which is in accordance with their semantic properties.

The conclusion of the dissertation is that there is a subjective-objective distinction among quantifying adverbs and this distinction has syntactic and semantic consequences. It is promising to assume that this distinction may be found in other types of adverbs as well and that the inner and outer adverbials might be universal. The findings also shed light on the related studies from a

cross-language perspective, since adverbs of quantification in English show similar patterns, with only some of them could participate in *wh*-movements or cleft movements.

(1) a. How often did John mow his lawn?

b. \*How usually/always did John mow his lawn?

(2) a. It was frequently that John performed the sonata.

b. \*It was usually that John performed the sonata.

This provides us with a new perspective in investigating this issue from the across-language perspective.

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