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Yang, Z.

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Yě, yě, yě: On the syntax and semantics of
Mandarin *yě*

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Abbreviations and conventions

AC	added constituent
ASP	aspect particle
ATTR	adnominal modifier DE (的)
CF.	compare
CL	classifier
CP	complementizer phrase
DE	structural particle DE (得)
EXP	experiential aspect particle
FCI	free-choice item
ID	identical constituent
IP	inflectional phrase
N	noun
NP	noun phrase, nominal phrase
NPI	negative polarity item
PASS	passive marker
PERF	perfective aspect particle
PROG	progressive aspect particle
PF	phonetic form
SFP	sentence final particle
STA	stative aspect particle
TOP	topic marker
TP	tense phrase
VP	verb phrase
*	ungrammatical sentence; infelicitous sentence
?	not a perfect sentence
A < B	A linearly precedes B in the sentence

Chapter 1 Introduction

1.1 Introduction and classification of *yě*

Why write a dissertation on *yě* ‘also’? On the surface, there is nothing special about the Mandarin particle compared to its counterparts in other languages, e.g., English *also/too/as well*, Dutch *ook*, German *auch* and so on. One of its typical usages can be illustrated by the following Mandarin sentence.¹

- (1) *Nǐ qù Běijīng, tā yě qù Běijīng.*
you go Beijing, he YE go Beijing.
English: ‘You will go to Beijing and he will also go to Beijing.’
Dutch: ‘Jij gaat naar Beijing en hij gaat ook naar Beijing’

As is demonstrated in (1), the Mandarin sentence can be translated into English and Dutch using an equivalent of the particle in the target languages. Mandarin *yě*, along with its English and Dutch counterparts, is often regarded as an additive focus particle in the sense that it “includes some alternative as possible values for the variable of its scope” (König 1991: 33). Taking (1) as an example, we see that, on the basis of the proposition that ‘you will go to Beijing’ conveyed by the first clause, the second clause with *yě* (henceforth the sentence with *yě* will be called “the host sentence”) includes or adds a new proposition into the current discourse. Additive particles are contrasted with another group of focus particles, i.e., the restrictive or exclusive particles, which exclude other alternatives under consideration, for instance, English *only*, German *nur* ‘only’. If Mandarin *yě* is simply an additive particle, what makes it so interesting?

One observation that instigated and propelled this research is that the particle can also occur in other contexts. Like its counterparts in some other languages, e.g., German *auch*, Dutch *ook* and Japanese *-mo* (König 1991: 66-67), the Mandarin additive particle *yě* makes various semantic or pragmatic contributions to sentences depending on the context. For instance, *yě* can also be used in a sentence with a preceding interrogative phrase expressing the “free-choice” meaning or some kind of universal quantification, as is illustrated in (2):

¹ The source of all the attested data will be indicated. Data without a source are provided by me and have always been tested with other native speakers. Glosses and translations are generally mine.

- (2) *Shéi yě shuǐfú-bu-liǎo tā.*
 who YE not.be.able.to.persuade him
 ‘Nobody can persuade him.’

The use of *yě* in this context is to some extent similar to German *wer...auch* or Dutch *wie dan ook* ‘whoever’. However, in Mandarin, *yě* is not the only word that can be used in this context. An alternative particle *dōu*, literally translated as ‘all’, can also be used here. For instance, *dōu* is interchangeable with *yě* in (2) without changing the meaning or interpretation.²

- (3) *Shéi dōu shuǐfú-bu-liǎo tā.*
 who DOU not.be.able.to.persuade him
 ‘Nobody can persuade him.’

The use of *dōu* has been extensively discussed in previous literature (e.g., Lee 1986; Cheng 1991, Cheng 1995, Lin 1998, Cheng 2009, Cheng and Giannakidou 2013) and will not be the focus of this research. However, for comparison purposes, *dōu* will occasionally be mentioned.

Yě (and *dōu*) can also be used in a purely scalar context with a preceding phrase expressing *even* or *even if*, as is illustrated in (4) and (5) from Hole (2004):

- (4) *Lián nǚwáng yě huì lái.*
 even queen YE will come
 ‘Even the queen will come.’
- (5) *Jìshǐ guówáng lái, wǒ yě bú qù.*
 even king come I YE not go
 ‘Even if the king comes, I won’t go.’
 (Hole 2004: 223)

Finally, one relatively less discussed usage of *yě* is its modal use in some contexts. Using *yě* in these contexts is claimed to “make the statement more gentle or mild” (Liu, etc. 2001: 246) or “express tactful criticism to the addressee or the fact that the speaker accepts the things the way they are” (Hole 2004: 41). Consider (6):

² The terms “meaning” and “interpretation” are used interchangeably in this dissertation.

- (6) *Nǐ yě tài xiǎokàn rén le, tā*
 you YE too belittle person SFP he
kě shì kēbān chūshēn.
 in.fact is professional.training background
 ‘You’d rather not look down on him [lit. you look down on him too much]. After all, he has received professional training.’
 (Hou 1998: 620)

Until now, I have mentioned a few contexts where *yě* can be used. Clearly, there are more concrete contexts where *yě* is used apart from those that are mentioned here. For instance, Li (2010) divides the uses of *yě* into four big categories according to its semantic usages and fourteen sub-categories according to the syntactic structures of the embedded clause. This brings us to a contentious question that has stirred up many debates: do we have one *yě* or several different *yě*s in different contexts? (e.g., Hole 2004; Chen 2008; Liu 2009; Deng 2017). I will not take a “meaning minimalist” viewpoint (“there are as many *yě*s as there are meanings/usages”) but I am not in favour of a uniform treatment for *yě* in all various contexts either. This is because of the objective existence of different interpretations and different syntactic positions of *yě*, as I will discuss at great length below. However, it is also important to note that the fact that it can occur in various contexts does not necessarily lead to the conclusion that *yě* has as many meanings or functions. Talking about the contribution of *yě*, it is quite important to distinguish the contextual aspects from the role of the particle per se. Meanwhile, I do not attempt to provide an exhaustive survey of all contexts where *yě* occurs, but choose instead to provide a classification framework, i.e., three major use types, that can cover almost any *yě* in any context. The three use types of *yě* are briefly introduced in the following subsections.

1.1.1 Use type I: the additive use

This usage of *yě* is often characterized as expressing a certain “similarity” or as “adding more information” (Ma 1982, Biq 1989, Lu 1999,). Additive *yě* is frequently used in a sentence followed by another sentence which shares some identical constituents, as is illustrated by (7) (= (1)) and (8):

- (7) *Nǐ qù Běijīng, tā YE qù Běijīng.*³
 you go Beijing, he YE go Beijing.
 ‘You will go to Beijing and he will also go to Beijing.’

³ I shall use capitals for stressed syllables whenever necessary.

- (8) *Tā qù Běijīng, yě qù NANJING.*
 he go Beijing also go Nanjing
 ‘He will go to Beijing and also to Nanjing.’

As shown in both (7) and (8), there are identical constituents between the preceding sentence and the host sentence of *yě*. The non-identical (or “added”) constituents denoting the new information are the subject of the host sentence in (7) and the object in (8). Along with this, the placement of primary stress in (7) and (8) is also different, i.e., the additive particle itself carries the accent in (7) and in (8) it is the added constituent which is marked by accent. Two observations can be made on the basis of (7) and (8): firstly, in order to interpret the additive particle, apart from the host sentence, the preceding sentence should also be taken into consideration. Secondly, the placement of the primary accent seems to be influenced by the position of the added constituent in the sentence. I will explore these two observations in more detail in Chapter 2.

Furthermore, the host sentence of additive *yě* does not necessarily possess an identical constituent to the preceding clause, as is illustrated in (9) and (10).

- (9) *Tiān liàng le, lù yě hǎo-zǒu le.*
 day bright SFP road YE easy-for-walking SFP
 ‘Day breaks and it is also getting easier to walk on the road.’

- (10) *Gèzi zhǎng-gāo le, rén yě biàn-pàng le.*
 Height grow-tall SFP person YE change-fat SFP
 ‘He is getting taller and is also gaining more weight.’

Although there is no shared constituent between the two adjacent sentences in (9) and (10), both sentences are claimed to have some “similarity in depth” (Shen 1983). In this context the function of *yě* is more like a conjunctive adverb expressing ‘likewise’ or ‘furthermore’. Note that in sentences such as (9) and (10), we can insert another *yě* in the preceding sentence. This “*yě...yě...*” pattern is illustrated by (11):

- (11) *Fàn yě chī-le, jiǔ yě hē-le.*
 meal YE eat-PERF, wine YE drink-PERF
 ‘Food was eaten and wine was drunk.’
 (Hou 1998:618)

We subsume the use of *yě* in (9)-(11) into the additive use type in the sense that the host sentences are assumed to still include or add a new proposition

into the ongoing discourse. However, the difference between (7)-(8) and (9)-(11) puts forward a question that needs to be addressed: if shared lexical constituents between the host sentence and its immediately preceding sentence is not a necessary condition, then what is the licensing condition of the additive *yě*? This question will also be answered in chapter 2.

1.1.2 Use type II: the parametric use

The term “parametric” *yě* is borrowed from Biq (1984, 1988) and Hole (2014) and covers all the contexts where a phrase in the left periphery such as a *wh*-phrase or a disjunctive phrase expressing universal semantics or a *no matter* meaning, or sentences involving *even* or *even if* constructions. In these contexts, the use of *yě* is compulsory in that the absence of it will lead to ungrammaticality. In this research, I will provide evidence to argue for some common licensing conditions of *yě* in all the different contexts under this parametric label. Some examples of this use are shown here as (12= (2)), (13) and (14= (5)):

- (12) *Shéi yě shuǐfú-bu-liǎo tā.*
 who YE not.be.able.to.persuade him
 ‘Nobody can persuade him.’
- (13) *Tā lián yí-jù-Héland-huà yě bú huì.⁴*
 he even one-CL-Dutch-language YE not can
 ‘He doesn’t even know one Dutch sentence.’
- (14) *Jíshǐ guówáng lái, wǒ yě bú qù.*
 even.if king come I YE not go
 ‘Even if the king comes, I won’t go.’

In addition to the example in (12) with a *wh*-phrase expressing *no matter*, the preceding constituent can also be a question-like disjunction in the sense it forms an alternative question like in (15):⁵

⁴ Note that the tone sandhi forms are explicitly marked. For instance, when the negation word precedes a first, second, or third tone, it is pronounced as *bù*. When it precedes a fourth tone, it is pronounced as *bú*. So are the tone sandhi forms of *yī* ‘one’.

⁵ Note that not every native speaker agrees that *yě* is good here in (15). But there is a clear contrast in the judgement when the modal *yào* is used and when it is absent in the sentence.

- (15) *Búlùn báitiān wǎnshang, tā yě*
 no.matter day-time evening he YE
yào diǎn-zhe yóudēng.
 will ignite-DUR oil-lamp
 ‘No matter whether it is during the day or in the evening, he always
 wants to keep the oil lamp burning.’
 (Hole 2004: 219, cf. Alleton 1972: 65)

Note that a conjunction word expressing *no matter*, for instance *búlùn* in (15), can optionally occur before the *wh*-phrase or disjunctive construction in all *no-matter* contexts.⁶

Apart from the *even* phrase introduced by *lián* ‘even’ as in (13), the preceding constituent expressing *even* can also be a stressed verbal element with an unstressed copy of the verb following *yě*, as in (16), or a minimizer phrase in the form of *yī-CL + N* ‘one-classifier N’ or *yìdiǎn + N* ‘a little N’ as shown in (17) (cf. (13)).

- (16) *Lǎo Sòng DONG yě bú dòng.*
 Old Song move YE not move
 ‘Old Song doesn’t even move.’
 (Hole 2004: 40, cf. Alleton 1972: 80)
- (17) *Tā YI-JU-Hélan-huà yě bú huì.*
 he one-CL-Dutch-language YE not can
 ‘He doesn’t even know one Dutch sentence.’

According to Hou (1998: 618), sentences like (16) and (17) can be paraphrased by a sentence introduced by a concessive conditional marker, e.g., *jíshǐ* ‘even if’ or the word *lián* ‘even’. It is therefore justified to subsume the use of *yě* in the above two patterns into the parametric use. On the surface, we can already find one obvious difference between the parametric use type and the additive use type: a preceding clause for the host sentence of the parametric *yě* is not necessary. In Chapter 4, I will discuss the parametric use

⁶ Note that not every native speaker agrees that *yě* is good here in (15). However, most speakers consulted, including some that do not like *yě* in sentences like this, agree that there is a clear contrast in acceptability between sentences with modal *yào* and sentences without it. I will return to this observation in Chapter 4.

in detail and provide an account for why we should treat this use differently from the additive one.

1.1.3 Use type III: the modal use

Yě can also be used as a modal particle and convey a certain attitude of the speaker. As is shown in (18) (= (6)), the use of *yě* can make the tone of a claim milder and make straightforward criticism less harsh.

- (18) *Nǐ yě tài xiǎokàn rén le,*
 you YE too belittle person SFP
tā kě shì kēbān chūshēn.
 he in.fact is professional.training background
 ‘You’d rather not look down on him [lit. you look down on him too much]. After all, he. has received professional training.’
 (Hou 1998: 620)

However, the generalization mentioned above does not pertain to all occurrences in various contexts of the modal use of *yě*. For instance, the following context where *yě* occurs has nothing to do with criticizing a person:

- (19) *Nà-jiàn shì yě jiù suàn-le,*
 that-CL thing YE then let.it.pass
nǐ búbì zǒng guà zài-xīn-shàng.
 you no.need always hang at-heart-on
 ‘Let’s just let that thing pass. You don’t need to always put it in mind.’
 (Hou 1998: 620)

As shown in (19), there are more contexts where the modal use of *yě* can occur. In addition, the semantic contribution of *yě* as a modal particle to the sentence seems of lesser importance in comparison to the other two use types. For instance, leaving *yě* out in (18) and (19) will not affect the grammaticality or meaning of the sentence. However, its pragmatic contribution is relatively more important. Despite the fact that it can occur in various contexts, the modal use of *yě* is invariably relevant to the speaker’s attitude or belief and adds a pragmatic contribution to the host sentence. I will explore the function of the modal use of *yě* in chapter 5.

By presenting a comprehensive overview of the aforementioned use types, I aim to add to the body of literature regarding the particle *yě*. The syntax and semantics of these three use types of Mandarin *yě* constitute the main focus and determine the structure of this dissertation. Moreover, the observation of certain recurring difficulties concerning the usage of *yě* that I

encountered while teaching Mandarin as a foreign language, motivated me to address a range of questions from the perspective of teaching Mandarin as a foreign language.

1.2 Questions raised by L2 learners' errors

Many scholars point out that data of second language acquisition from adults may reveal more about the nature of languages and provide more evidence for testing hypotheses which might not be available in native speaker data (Cook 1981; Felix 1988). The current research does not focus on students' errors, nor does it have the intention to give pedagogic suggestions. Nonetheless, as a language teacher, looking into non-native students' errors is always helpful to spot questions that native speakers tend to overlook. The additive use and parametric use of *yě* is in fact a grammar point which Mandarin learners usually encounter during the first phase of learning Mandarin. Yet the erroneous usage of this particle remains prevalent among students of different levels. Understanding the reasoning leading to these errors requires both knowledge of language acquisition, and a thorough inquiry of the syntactic and semantic/pragmatic characteristics of *yě*.

One frequent mistake regarding additive *yě* concerns the order or the positioning of the particle in a sentence. Consider (20) and (21):⁷

(20)**Yě rénmen duì wǒ hěn shīwàng.*
 YE people towards me very disappointed
 'Also, people are disappointed with me.'

(21)**Wǒ kěyǐ yě qù nàlǐ.*
 I can also go there
 'I can also go there.'

The mistakes of (20) and (21) lie in the incorrect positioning of *yě* in the sentence. *Yě* cannot occur at the start of the sentence as in (20) and after the root modal expressing possibility as in (21). Note that in English (as is shown in the English translation), the additive particle can indeed occur in the positions where the Mandarin counterpart cannot be.

⁷ Data of students' errors are from The HSK Dynamic Composition Corpus. Created by Beijing Language and Culture University, the corpus is composed of 11,569 compositions written by learners of Chinese as a foreign language when they participated in the HSK. Learners' errors are tagged at character, word, and sentence levels.

In fact, the additive particle can occur at the start of a sentence in many European languages and functions somewhat like a conjunction. Consider the German and English sentences below (König 1991: 65):

- (22) *Ich habe keine Zeit Ebenso/auch*
 I have none time likewise/also
fehlt es mir an Geld.
 lack it me at money
 ‘I haven’t got the time. Also, I lack the funds.’

- (23) *Also, many people fail to see that immediate action is required.*

The German sentence in (22) demonstrates that the additive particle *auch* ‘also’ can interchange with a conjunction word, i.e. *ebenso* ‘likewise’. The Mandarin additive particle *yě* can have a similar function. However, it has to follow a strict positional restriction: *yě* cannot occur at the start of a sentence.

Now return to (21), in which *yě* is in the wrong position after the modal *kěyǐ* ‘can’. This type of mistake is indeed predictable considering the fact that modals and auxiliary verbs often occur before the additive particle in some languages. For instance, consider the following Dutch example:

- (24) *Ik kan ook Chinees spreken.*
 I can also Chinese speak
 ‘I can also speak Chinese (besides English)’

To provide an account for the ungrammaticality of (20) and (21), we need to determine the syntactic position of *yě* in the syntactic structure and also its position relative to other adverbs or modals. In Chapter 3, we are going to explore a detailed survey of the syntactic position of *yě* with the aid of the existing hierarchy of modals proposed by Butler (2003) and the hierarchy of adverbs proposed by Cinque (1999). Since this research adopts a polysemic treatment of *yě* in different contexts, I will also demonstrate that parametric *yě* in fact has a different syntactic position than additive *yě*.

Another type of error made by students concerns the absence of *yě*. It can be illustrated by the following:

- (25) *Wǒ lián yí-jù huà *(yě) shuō-bu-chūlái.*
 I even one-Cl speech YE not.able.to.say
 ‘I could not even say a word.’

(26) *Jíshǐ xuéxí zài lèi, wǒ *(yě) yào*
 even.if study more tired I YE will
chōu-chū shíjiān gēn tā liáotiān.
 spare time with him chat
 ‘Even if studying makes me more tired, I will still spare time to chat with him.’

(27) *Wúlùn xuéxí duō máng,*
 no.matter study how busy
*wǒ *(yě) yào qù yùndòng.*
 I YE will go sport
 ‘No matter how busy I am with my studying, I still keep doing sports.’

(25)-(27) demonstrate three contexts where the use of *yě* is mandatory, i.e., an *even* context in (25), an *even if* context in (26) and a *no matter* context in (27). The parametric use of *yě* in these contexts is quite different from the additive use. For instance, the absence of the parametric *yě* in the sentences above will result in ungrammaticality, but not so in the host sentences with an additive *yě*. In order to understand this discrepancy, we need to understand why the use of *yě* is mandatory in these contexts. And whether there is any common element among the three contexts that can license the use of the parametric *yě*.

In addition, the following mistakes raise more questions about the use of *yě* in these contexts, especially in the *no-matter* contexts. Consider (28) and (29):

(28) *Wǒ zhēnde xué-le hěn-duō dōngxi:*
 I really learn-PERF very-many thing
wénhuà-shang-de, xuéshù-shang-de, yányǔ-shang-de,
 culture-on-ATTR academic-on-ATTR language-on-ATTR
*shénme dōu / *yě yǒu.*
 what DOU YE have
 ‘I really learned a lot, for instance, on culture, academics, language and so on. Everything is included.’

(29) *Zhè yì diǎn shéi dōu / *yě hěn qīngchu.*
 this one point who DOU YE very clear
 ‘Everyone is clear about this point.’

As I mentioned earlier on, instead of *yě*, another particle *dōu* ‘all’ can be used alternatively in *no matter* or *even* contexts. However, this interchangeability is not confirmed by (28) and (29) as only *dōu* can be used there. The restriction of the interchangeability between parametric *yě* and *dōu* in (28) and (29)

suggests that the two particles are not completely the same in terms of distribution. Certain aspects of *yě* block its use in contexts like (28) and (29). In Chapter 4, starting from the observation made in (28) and (29), I will identify the specific semantic element of parametric *yě* which might also be the element that distinguishes *yě* from *dōu*.

To put it in a nutshell, I will attempt to answer the following major questions in this dissertation:

- 1) What justification is there for the claim that there is more than one *yě*? What is the defining semantic (or pragmatic) property of each use type of *yě*? What are the licensing conditions of each use type of *yě*?
- 2) Provided that the interpretation or the meaning of each use of *yě* differs, do they also differ in syntactic positions, especially their position relative to modals and other adverbs?
- 3) How does *yě* as a focus particle interact with its relevant constituents in a sentence and the information encapsulated within the context/background?

1.3 Organization of the dissertation

To a large extent the organization of chapters follows the axis of the classifications of *yě*. As I mentioned, Chapters 2, 4, and 5 are designed respectively for the discussion of the three different use types of *yě* mentioned earlier (additive, parametric and modal). Chapter 3 addresses the syntactic survey of the positions of the different use types of *yě*.

In Chapter 2, I discuss the additive *yě* and argue for the anaphoric nature of additive *yě*. After examining the characteristics of the antecedent sentence that additive *yě* requires, I propose that similarity in argumentative orientation in the discourse is the main element to license the use of the additive *yě*. The relation between the additive particle and the added/focus constituent is discussed too. Finally, the difference and similarity between stressed *yě* and unstressed *yě* is discussed.

In Chapter 3, I present syntactic evidence to argue that we need to postulate two different positions, one for additive *yě* and one for parametric *yě*. I first provide evidence to show that Mandarin additive *yě* is in the IP zone in the syntactic structure. It is located higher than the inner subject and lower than the outer subject. In addition, a survey on relative ordering between additive *yě* and adverbs and modals based on the syntactic hierarchy of modals proposed by Butler (2003) and hierarchy of adverbs proposed by Cinque (1999), will help determine a more accurate position of additive *yě* in the hierarchy. By the same token, a survey of the position of *yě* relative to modals

and adverbs in *no-matter* and *even* contexts will show that parametric *yě* in these contexts sits higher in the structure than epistemic necessity modals. Therefore, we conclude that there are in fact two syntactic positions for *yě*, one is in the IP domain, and the other is higher, in the CP.

In light of the proposal made in Chapter 3 that there are two positions for *yě*, it would be good to establish that there are also two different interpretations corresponding to the two positions. Therefore, the main task of Chapter 4 is to present evidence to argue that parametric *yě* has a different interpretation from the additive *yě*, i.e., parametric *yě* is scalar in nature and requires a scalar interpretation of its preceding foci. Following the syntactic difference discussed in Chapter 3, we can establish the existence of two different *yě*s, the lower one in IP and the higher one in CP.

Chapter 5 examines three different contexts where the modal use of *yě* is applied. I argue that the modal use of *yě* in all these contexts invariably indicates a concessive relation between the propositions expressed by the host sentence and the proposition in the background. Due to its function in marking a concessive relation, the host sentence pragmatically obtains a polite, indirect, tactful or less absolute reading. I propose that the modal use of *yě* is closely linked to parametric *yě*.

Chapter 6 presents the conclusions and introduces two relevant discussions, one is on the use of *dōu*, and the other concerns the historical development of the use of *yě*.

Chapter 2 Additive *yě*

The main goal of this chapter is to argue for the idea that the Mandarin additive particle *yě* is an anaphoric element.

In this process, I will answer a number of questions, some more basic than others. First, I will show that additive *yě* displays a number of properties which are defining properties of anaphoric elements. This will be done in section 2.3. The next, naturally following, question concerns the antecedents of additive *yě*: if it is an anaphoric element, what are its antecedents? We will see that when it comes to the conditions the antecedents have to meet, the main correlating factor is similarity in argumentative orientation in the discourse, but how is this determined? These questions will be discussed in section 2.4.

In the last main section of this chapter, section 2.5., we turn our attention to the relation between the added constituent and additive *yě*. How are the added constituent and additive *yě* positioned relative to each other and what difference does it make, whether the added constituent follows or precedes the additive particle? How is the relation between the additive particle and the added constituent established in each situation? A related issue to be discussed in this section has to do with stress, because in some cases *yě* is stressed while in others it is not, which raises the question whether stressed *yě* and unstressed *yě* have the same meaning and function. We will look at this question from the perspective of ideas developed by Umbach (2012).

Before we get to these questions, we will do some ground work. In section 2.2, we will establish that *yě* is, in fact, an additive particle. But first, in the next section, I will introduce some of the notions regarding focus and alternative semantics which we will need later on to be able to verify the idea that additive *yě* is a focus particle that interacts with other constituents in the sentence.

2.1 Introduction to focus and alternative semantics

Phenomena relevant to focus have been the subject of discussion for a long time (Jackendoff 1972; Chomsky 1981; Taglicht 1984; von Stechow 1982, 1991; Jacobs 1983, Rooth 1985; 1992, 1996; König 1991; Krifka 1991, 1995, 2001). **Focus** often concerns the new or important information in a sentence that “is assumed by the speaker not to be shared by him and the hearer” while **background** concerns the given or presupposed information that “is assumed by the speaker to be shared by him and the hearer” (Jackendoff 1972:16).

Focus can be found in many different contexts and has different instantiations (Zimmermann and Hole 2009). For instance, it can be illustrated with “the question-answer paradigm” in which the part of a sentence that

answers the relevant *wh*-question can be seen as the focus of the sentence (Rooth 1996:276; Gundel 1999: 295). Here is a sentence from Hole (2004: 5) to demonstrate this:

- (1) *Q: Who called the meeting?*
A1: BILL called the meeting.
*A2: *Bill called the MEETING.*

As is shown in (1: A1), *Bill* in the answer, which is the new information, can be seen as the **focus constituent** of the sentence or the **associated constituent** of focus. Two observations about focus can be made on the basis of (1): first, the focus constituent is often prosodically more prominent in the sentence. For instance, *BILL* in A1 carries the pitch accent of the sentence. The pitch accent on the focus constituent is argued to be the grammatical realization of the abstract “F-feature” attached to focus constituents, i.e., the accented constituent is “F-Marked” (Jackendoff 1972; Rooth 1992; Selkirk 1984, 1995: 553). As shown in (1), the placement of the pitch accent will influence the interpretation of the sentence. Second, focus is sensitive to the preceding discourse and thus is discourse-anaphoric. This can be demonstrated by the “congruence” between the question and the answer in (1) (Krifka 2001). The “Q-A congruence” in (1) can thus be formally represented by (2):

- (2) $[[Q]] = \langle \lambda x. x \text{ called the meeting}, x \in \text{person} \rangle$
 $[[A1]] = \langle \lambda x. x \text{ called the meeting}, \text{Bill} \rangle$
 $*[[A2]] = \langle \lambda x. \text{Bill called } x, \text{ the meeting} \rangle$

The question in (1) determines a set of potential answers or **alternatives**, i.e., *someone called the meeting*. And the answer must be one of the alternatives restricted by the question. That is why A1 is good, but A2 is infelicitous.

There are different approaches in the literature to account for focus relevant phenomena.⁸ The analysis in this dissertation is mainly based on the **alternative semantics** laid out by Rooth (1985, 1992, 1996). According to Rooth, an expression α has two meaning components: one is the ordinary value, which is the lexical meaning of α and is represented by $[[\alpha]]^o$, the other is the focus value, which is a set of objects or alternatives that match α in type

⁸ Apart from alternative semantics, another approach to focus is called the “Structured Propositions” or “Structured Meaning”, which introduces a partition on the meaning of propositions with focus marking into focus and background (von Stechow 1982, 1991; Jacobs 1983; Krifka 1991, 1995, 2001). The algorithm in (2) can be seen as one application of this approach. The first part, i.e., *x called the meeting*, can be seen as the background part, and *Bill* is the focus part.

and is represented by $[[\alpha]]^f$. The core idea of alternative semantics is that we can come up with the alternative propositions by making a “substitution” with the focus constituent and the preceding discourse provides an **antecedent** which denotes “an alternative to the scope of focus” or “a set of alternatives”. The focus marking, i.e., the pitch accent, signals the locus of variation in the sets of alternatives.

Take (1) as an example. The focus semantic value for the answer to the sentence in (1) $[_s \text{ [Bill]}_F \text{ called the meeting}]$ can be seen as a set of alternatives in the form of ‘x called the meeting’. The focus value of *Bill* in sentence (1) does not only assert its ordinary semantic meaning that Bill called the meeting, but also triggers a set of potential alternatives, such as John called the meeting or Mary called the meeting and so on. The focus value of sentence (1) can be written with set abstraction symbols as follows:

(3) $[_s \text{ [Bill]}_F \text{ called the meeting}]^f = \{ \text{call}(x, m) \mid x \in E \}$, where E is the domain of individuals.

The alternatives denoted by the focus value of (1:A1) can be unlimited as long as it satisfies the necessary requirements of (3), i.e., x is an individual. However, in the real world, the alternatives under consideration concern only the contextually relevant set of alternatives, which is often a smaller number than those corresponding to the unrestricted focus value. A pragmatic or context determined domain C is therefore introduced and C is a subset of the focus semantic value of the sentence.⁹ Rooth uses the English restrictive focus particle *only* to demonstrate the domain constraint role of focus, as is illustrated in (4):

(4) a. $[_s \text{ Mary only VP}]$
 b. $\forall P [P \in C \wedge P(m) \rightarrow P = \text{VP}]$
 c. Focus-determined constraint: $C \subseteq [[\text{VP}]]^f$
 (Rooth 1992: 79)

As shown in (4), the focus particle *only* does not apply directly to the focus value, but quantifies the overt variable C . The pragmatically determined C is a subset of the unrestricted focus value. While the ordinary value of the

⁹ Note that Rooth argues that the information about C does not only derive from the semantics of focus, but may also derive from some pragmatic process to fix the value or add further information. This is an important assumption because later we will see an example showing that pragmatics or context may serve as a ‘restrictor’ on the domain of alternatives and interact with the interpretation of the Mandarin focus particle $y\check{e}$ in some cases.

proposition is one alternative for C, and therefore a subset of the subset of the focus value.

With the theoretical assumptions laid out and relevant notions introduced, we can now start to investigate additive *yě*.

2.2 Mandarin *yě* as an additive particle

It is generally assumed that additivity is the semantic core or the “basic use” of the Mandarin particle *yě* (e.g., Biq 1989; Hou 1998; Lü 1999; Hole 2004). As an additive particle, *yě* always triggers the alternatives in the discourse. The additive use of *yě* is essentially the same as that of English *also*, German *auch* and Dutch *ook*. As noted by König (1991: 62), these words all share the following characteristics: “All sentences with simple additive particles entail the corresponding sentences without particle and presuppose furthermore that at least one of the alternative values under consideration in a context satisfies the complex predicate.” For instance, as Yang (1988: 56) points out, in the following sentence the use of *yě* leads to at least three possible alternatives in the background.

- (5) *Wáng lǎoshī yě jiāo shùxué.*¹⁰
 Wang teacher also teach Math
 ‘Teacher Wang also teaches Math.’
- a. There is at least one other person who teaches Math.
 - b. Teacher Wang teaches at least one other subject besides Math.
 - c. Teacher Wang not only teaches, but also studies Math.
- (Yang 1988: 56)

In fact, we can add another alternative to (5) if the whole VP is the focus constituent, for instance:

- d. Teacher Wang does not only teach Math, he is also the headmaster.

Following the change of focus constituents in the host sentence of *yě*, four possible sets of corresponding alternatives can be derived. Applying the theory of alternative semantics, the four sets of alternatives are obtainable via a simple substitution in different positions of the focus constituent, namely the subject, the verb, the object and the whole VP as illustrated in (5). It is clear that with *yě* inserted in the sentence without any background, every

¹⁰ The readers may find that when you read out the sentences in this chapter, additive particles in some sentences are stressed, while others are not. The stressed and unstressed variants of additive particles will be immediately discussed in 2.5. For the purpose of the present discussion, this is not important.

2.3.1 The anaphoric properties of additive *yě*

As noted by Rooth (1992, cf. van der Sandt 1992, Geurts 1999, van der Sandt and Geurts 2001), an additive particle is much like an “anaphoric element” such as a pronoun, on a quest to find an antecedent or licenser. The anaphoric element is claimed to be a linguistic entity which “recalls to the consciousness of a hearer/reader entities or concepts that have already been introduced into a discourse” (Botley and McEnery 2000: 2) and thus indicates a “referential tie” to the antecedent (Tognini-Bonelli 2001:70). The interpretation of an anaphoric element has to be contextually-dependent. As we will discuss in detail below, just like pronouns, an additive particle has three important anaphoric properties: firstly, it has no substantial lexical meaning itself and thus it allows no accommodation; secondly, it always refers to something in the same sentence or in the linguistic context. It has to be interpreted anaphorically in relation to an antecedent; thirdly, there is a nonsymmetric relation between the two parts coordinated by the additive particle, i.e., the additive particle always refers backwards to the antecedent, and not the other way around.

The anaphoric nature of additive particles is evident from the following phenomena: Firstly, it has been shown by König (1991), Krifka (1999) and Hole (2004) that the use of an additive particle has no influence on the truth value of the host sentence. As seen in (5), the sentence with additive *yě* does not alter the truth of the proposition without it. There is no contribution of additive *yě* to the host sentence in lexical meaning.

The second property is relevant to the first: due to its lack of lexical meaning, the interpretation of additive particles always depends on the preceding context. The semantic difference of the four situations listed in (5) can only be triggered when considering the relation to the background alternatives in the preceding discourse.

One observation is relevant to the first two properties. Although the existence of an alternative to the host sentence is presupposed, the presupposed alternative cannot be retrieved solely by the particle. To satisfy the presupposition of additive particles, it has been first observed by Kripke (1990, also in Kripke 2009) that an explicit antecedent, which can provide at least one alternative to the proposition of the host sentence, is required to license the additive particle. Consider (8):

(8)* Sam is having dinner in New York tonight, too.
(Kripke 2009: 373)

If an explicit alternative or an “active context” in Kripke’s term indicating the existence of another person who is having dinner in New York cannot be

found in the preceding context, the sentence is bad, even though, surely, there must be someone else who is having dinner at the same time in such a big city. Although the presupposition can be trivially satisfied, the sentence still sounds bad without context. This shows that the interpretation of the host sentence of additive particles can never be independent of its preceding discourse. I shall return to this observation in the following section.

The third property that can be linked to the anaphoric nature of additive particles concerns the nonsymmetric dependence relation between the two clauses, i.e., the sequence between the antecedent and the host sentence of *yě* is important. For instance, if we switch the order of the two clauses in (9), we get a degraded sentence. Compare (9) with (10):

- (9) *Zhāng Sān yǒu yí-ge nǚér,*
 Zhang San have one-CL daughter,
Lǐ Sì yě zhǐ yǒu yí-ge hái zi.
 Li Si YE only have one-CL child
 ‘Zhang San has one daughter. Li Si has only one child too.’

- (10)**Lǐ Sì zhǐ yǒu yí-ge hái zi,*
 Li Si only have one-CL child
Zhāng Sān yě yǒu yí-ge nǚér.
 Zhang San YE have one-CL daughter,
 ‘Li Si has only one child, Zhang San has one daughter too.’

The nonsymmetric dependence relation can also be found between pronouns and their antecedent in coordinated sentences like the ones in (9)-(10): they are always anaphoric and never cataphoric in such contexts, another similarity between additive particles and pronouns.

2.3.2 The anti-accommodation property of additive *yě*

As shown in (8), the additive particle *too* requires an explicit anaphoric reference in the preceding discourse to identify its presupposition. Note that, as a contrast, the presupposition of some structures does not need to be verified in the preceding discourse. Consider (11).

- (11) I don’t want to be near the smoking section because [I used to smoke and] I’ve just stopped smoking.
 (Chierchia and McConnell-Ginet 2000: 32)

The sentence in (11) ‘I have just stopped smoking’ presupposes the clause in the square brackets. However, different from (8), the presupposition does not

need to be verified in the preceding discourse. The listener, e.g., a reservations clerk, is expected to accept the presupposition without any problem. The difference between (8) and (11) is that the presupposition in (11) can be derived through what is called “**accommodation**”. According to von Stechow (2008: 141-142, cf. Karttunen 1974, Lewis 1979), presupposition accommodation occurs when the presuppositions of the speaker’s sentence is not yet fulfilled and the listener “makes the same tacit extension” of the prior common ground that the speaker appears to have made. As a result, the context is adjusted quietly and without fuss when the utterance is processed. The presupposition “I used to smoke” in (11) can be accommodated due to the lexical meaning of *stop*, but the presupposition of *too* cannot be derived in the same way. The resistance to accommodation is completely in line with the hypothesis that the additive particle, on a par with pronouns, does not have sufficient descriptive content for accommodation (Asher and Lasnik 1998, Zeevat 1992, 2004).

Incidentally, this anti-accommodation assumption is challenged by Van der Sandt and Geurts (2001) who divide the presupposition of *too* into two parts, viz., the anaphoric element or pronominal part, which must be bound to some parallel information in the antecedent (which is in line with Kripke), and the descriptive part which can “be resolved by way of accommodation” (Van der Sandt and Geurts 2001: 4). Therefore, contrary to the claim that *too* hardly has any meaning apart from inducing a presupposition, they argue that the presupposition of *too* allows for accommodation. One of their examples is (12), in which the host sentence of *too* requires for the truth of the presupposition that the boss will come. And the interpretation of (12) thus forces the accommodation of the host sentence of *too*.

- (12) Either the boss will stay away from the party, or John will come, too.
(cf. Kripke 2009:384)

However, sentence (12) cannot be taken as a good example to show that the presupposition of *too* admits accommodation. The second conjunct in (12), with *too*, presupposes a set of alternatives that someone else will come to the party. The presupposition can be verified by the antecedent sentence. It is very easy to fill in the missing part ‘Either the boss will stay away from the party, or...’, i.e., “...(or) the boss will come to the party”. In other words, the antecedent, which can identify the presupposition of the host sentence of *too*, can be derived from the conventional implicature of the first conjunct of (12). Therefore, it is not obvious that accommodation happens in the second conjunct with *too*. The anti-accommodation property of *too* can thus be maintained. We will see later that the anti-accommodation property of the

additive particle is one crucial reason to separate additive *yě* from its scalar counterpart.

So far, I have argued that the additive particle should be treated as an anaphoric element and a few anaphoric properties have been discussed to justify the treatment, namely, it is lexically void; to satisfy its presupposition, the host sentence of *yě* requires an explicit antecedent (which will be discussed and revised in the subsequent section); and it shares the backward dependency with other anaphoric elements. Its anaphoric nature and its lack of lexical meaning have certain interesting consequences, for instance, it resists presuppositional accommodation.

We can see that the interpretation of additive particles, being the anaphoric elements that they are, is very much dependent on their antecedents. In the following section, we will discuss the conditions that a good antecedent for additive *yě* should meet.

2.3.3 Antecedents of additive *yě*

As shown in (8), the antecedent of the additive particle has to be mentioned in the context and it cannot be derived by presupposition accommodation. To satisfy the presupposition of the additive particle, the antecedent is often lexically similar to the host sentence. The following Mandarin sentences demonstrate this (Biq 1989: 3):

- (13) *Nǐ qù Běijīng, tā yě qù Běijīng.*
 you go Beijing, he YE go Beijing
 ‘You will go to Beijing and he will also go to Beijing.’ (= (1) from Chapter 1)
- (14) *Tāmen huì shuō Zhōngguó-huà, yě huì shuō Yīngwén.*
 they can speak Chinese YE can speak English
 ‘They can speak Chinese; they can also speak English.’
- (15) *Zhè-ge rén zuótiān lái-le,*
 this-CL person yesterday come-PERF
jīntiān yě lái-le.
 today YE come-PERF
 ‘This person came yesterday; he also came today.’

The similarity between the antecedent and the host sentence of *yě* is straightforward in (13)-(15). In all these sentences, there is only one different constituent (or “contrasting element”) between the antecedent and the host sentence of *yě* and all the other constituents between the two parts are identical.

As we already saw in (5), the contrasting elements in Mandarin can be expressed by any constituent in the sentence, for instance, the subject in (13), the object in (14) and the temporal adverb in (15). These sentences also illustrate a restriction on the number of contrasting constituents, which is often mentioned in the literature, i.e., the so-called “one-distinction” requirement of *too* (Green 1968, Kaplan 1984). This one-distinction requirement stipulates that when *too* is used in the host sentence, the constituents of its antecedent and the host sentence can only have one difference. It can be illustrated by (16):

- (16)*Jo had fish and Mo had soup too.
(cf. Kaplan 1984: 510)

Both the subject and the object of the two conjuncts are different in (16), making the use of *too* infelicitous.

It is not difficult to find evidence from Mandarin to support the one-distinction requirement. Consider (17):

- (17)**Zhāng Sān chī zhūròu, Lǐ Sì yě chī qīngcài.*
Zhang San eat pork Li Si YE eat vegetable
‘Zhang San eats pork and Li Si also eats vegetable.’

The antecedent and the host sentence of *yě* in (17) have different subjects and objects. The so-called one-distinction requirement is broken, and (17) is incorrect, as expected. However, this requirement is not a necessary condition to license *yě*. Consider the following Mandarin examples from Liu (2009: 25):

- (18) *Zhāng Sān chī-le yú,*
Zhang San eat-PERF fish
Lǐ Sì yě hē-le tāng.
Li Si YE drink-PERF soup.
‘Zhang San ate fish, and Li Si also had soup.’

- (19) *Zhāng Sān zuótiān zài-jīa chī-le yú,*
Zhang San yesterday at-home eat-PERF fish
Lǐ Sì jīntiān zài-fàndiàn yě chī-le yú.
Li Si today at-restaurant YE eat-PERF fish
‘Zhang San ate fish at home yesterday and Li Si also ate fish at a restaurant today.’

In (18), the contrasting constituents involve the subjects and the predicates of the two adjacent clauses and in (19), as many as three syntactic categories in

the two sentences are different, namely, the subject, the time adverb and the locative adverbial.¹¹ (18) and (19) challenge the so-called ‘one-distinction’ requirement, and also make the treatment of *yě* as a mere “presupposition trigger” problematic. For instance, in (18), in line with the alternative semantics and presupposition treatment, the use of additive *yě* in the host sentence presupposes that ‘Someone different from Lǐ Sì ate soup.’ or ‘Lǐ Sì ate something else besides soup.’ However, the current antecedent cannot satisfy its presupposition, yet (18) is a good sentence. (18) and (19) demonstrate that lexical identity and its relevant “one-distinction” requirement cannot cover all cases where additive *yě* is licensed. Furthermore, this means that we also need an alternative explanation for why sentences like (17) are ruled out. To this end, in 2.4, I will discuss other factors at play which determine the use of additive particles.

It is noteworthy that the antecedent that verifies the presupposition of the additive particle in fact does not have to be explicitly asserted (Winterstein 2009:324). This is in line with Kripke (2009: 372-373), who argues that the antecedent can consist of certain parallel information that is either “in another clause” or in the “active context”.

In light of this, we may argue that in Mandarin, to meet the presupposition requirement, the host sentence of additive particles mandatorily requires a **verifiable antecedent** instead of an explicit antecedent. The antecedent of additive *yě* can be seen as verifiable if the non-asserted part, e.g., either presupposition, conventional or conversational implicature of the preceding sentence can satisfy the presupposition of *yě*. Consider (20) and (21):

- (20) *Zhāng Sān hěn hòuhuǐ méi qù,*
 Zhang San very regret not go
Lǐ Sì yě méi qù.
 Li Si YE not go
 ‘Zhang San regrets that he did not go. Li Si did not go either.’

- (21) *Zhāng Sān yǒu yí-ge nǚér,*
 Zhang San have one-CL daughter,
Lǐ Sì yě zhǐ yǒu yí-ge hái-zi.
 Li Si also only have one-CL child
 ‘Zhang San has one daughter. Li Si has only one child too.’ (= (9))

¹¹ This feature is not a unique characteristic of Mandarin. The Mandarin sentences here can be reproduced in Dutch as well (and probably other languages too); here is (19) in Dutch: *Jan heeft gisteren thuis vis gegeten en ik heb vandaag in de kantine ook vis gegeten.*

The presupposed proposition of the host sentence of *yě* in (20) is that someone different from *Lǐ Sì* did not go there. The presupposition of the antecedent sentence is that *Zhāng Sān* did not go there, which satisfies the presupposition of the host sentence. The host sentence of *yě* in (21) presupposes that there is someone else who only has one child.¹² The antecedent conversationally implicates that *Zhāng Sān* only has one daughter and no other child. So, the presupposition requirement of *yě* is met. From these two examples, we can conclude that the antecedent of the host sentence of *yě* does not have to be explicitly asserted to meet the need of the presupposition.

Now we can account for the infelicity of (8) by arguing that there is no antecedent or accessible context for the verification of its presupposition.

(22)*Sam is having dinner in New York tonight, too.
(= (8) from Kripke 2009: 373)

Indeed, as pointed out by Kripke, as long as the well-known fact that many people are having dinner in New York is mentioned, we can also get an “active context” to license the additive particle, as illustrated by (23):

(23) Like many others, Sam is having dinner in New York too.

Therefore, a verifiable antecedent in the preceding discourse, to which an additive particle can refer, is more important than lexical similarity. This is not surprising if we treat additive particles as anaphoric elements, which are claimed to inform the listener or the reader “how discourse is constructed and maintained” (Botley and McEnery 2000: 3). In the following section, I will argue that similarity in discourse, more specifically, identical argumentative orientation between the antecedent and the host sentence, is the fundamental element for a suitable antecedent of the additive particle *yě*.

2.4 Additive *yě* and discourse similarity

The contextual or discourse function of additive particles has been discussed in the literature. Kaplan (1984: 516) claims that the licensing of *too* stems from its discourse function, which is to “emphasize the similarity between contrasting constituents”. By using *too*, it is not the contrast between the

¹² It should be noted that the antecedent sentence itself in (21) does not necessarily presuppose that *Zhāng Sān* only has one child. I will return to this issue in section 2.4.4 below.

contrasting items but the unexpected similarity that is being emphasized. Following Kaplan's idea, our earlier discussion that the "one-distinction" requirement cannot be maintained is thus reasonable, since the discourse similarity is more crucial. Zeevat (2004) also stresses the contextual or discourse role of additive particles and assumes focus particles as markers of a relation between the host sentence and the context. For instance, the relation marked by additive particles such as *too*, *also*, *ook* and *auch* is stated as follows:

- (24) The topic has been addressed before but the content gives an expansion of the earlier answer.
(Zeevat 2004: 178)

Zeevat (2004: 192) also argues that these particles have a role in marking speech acts, namely, the aim of the speaker of using *too* is to "bind an old topic question to a new value that is obtained by adding the value specified in the sentence to the old value." In light of these analyses, we may assume that if an antecedent is similar to the host sentence of additive particles at the discourse level, the use of *yě* is possible. However, one may still ask: what exactly is "similarity" at the discourse level?

2.4.1 A remark on Winterstein (2009)

Winterstein (2009: 331) borrows the term "argumentation" from Anscombe and Ducrot (1983) and Merin (1999) to elaborate on the notion "discourse similarity". Two properties of argumentation are proposed by Winterstein and are used to judge whether the two utterances are similar or not. In this dissertation, I argue that only the first property is the crucial discourse condition of licensing additive *yě*. In the following section, I will first demonstrate Winterstein's two properties using Mandarin data and then present arguments that refute the second property of argumentation.

The first property is about argumentative orientation. According to Winterstein, the argumentation is oriented, i.e., it can be positive or negative relative to the argumentative goal. Only if the two utterances have the same argumentative orientation to the discourse goal, the use of the additive particle can be licensed. It can be used to provide an account for the infelicity of the following Mandarin sentences:

- (25) a. *Zhāng Sān hé Lǐ Sì kǎo-de zěnmeyàng?*
Zhang San and Li Si test-DE how
'How did Zhang San and Li Si do in the test?'

- b**Zhāng Sān méi zuò-wán suǒyǒu tí,*
 Zhang San not do-finish all question
Lǐ Sì yě zuò-le yìxiē tí.
 Li Si YE do-PERF some question
 ‘Zhang San did not answer all the questions, Li Si also answered some questions.’
 (cf. Winterstein 2009: 328)

Although the proposition expressed by the host sentence of *yě* in (25b) is truth-conditionally similar to its counterpart in the antecedent, it differs in polarity regarding the argumentative orientation. The first clause is a negative comment about *Zhāng Sān*’s performance in the exam while the second is positive regarding *Lǐ Sì*. Therefore, the infelicity of (25b) shows that the similar argumentative orientation between the antecedent and the host sentence, regardless of the truth conditions, is a necessary licensing condition for additive particles.

According to Winterstein, the second property is that the discourse similarity is a gradable quantity rather than a Boolean value, i.e., the “argumentative force” of the two utterances in the host and the antecedent of *too* should not be too “distant” on the argumentative scale relative to a particular goal. Consider (26):

- (26) a. *Zhāng Sān hé Lǐ Sì kǎo-de zěnmeyàng?*
 Zhang San and Li Si test-DE how
 ‘How did Zhang San and Li Si do in the test?’
- b. *Zhāng Sān zuò-wán-le suǒyǒu tí,*
 Zhang San do-finish-PERF all question
Lǐ Sì yě zuò-wán-le dàbùfen tí.
 Li Si YE do-finish-PERF most question
 ‘Zhang San answered all the questions, and Li Si also answered most of the questions.’
- c. **Zhāng Sān zuò-wán-le suǒyǒu tí,*
 Zhang San do-finish-PERF all question
Lǐ Sì yě zuò-wán-le yìxiē tí.
 Li Si YE do-finish-PERF some question
 ‘Zhang San answered all the questions, and Li Si also answered some of the questions.’

Winterstein argues that quantifiers can form argumentative scales such as <all, most, some, a bit> (cf. Horn 1972, 1989). The felicity of (26b) and the

infelicity of (26c) should be ascribed to the “distance” between the two conjuncts with these quantifiers. It seems true by looking at (26). However, (26c) turns felicitous in a context like this: Lǐ Sì is a student who is always bad at exams, so if he solved a few problems in this exam, it could be taken as a good result for him. So, in this context, the two parts of (26c) both give a positive answer to the question of (26a). In this context, sentence (26c) is correct. Similarly, we can also find situations in which (26b) could be an infelicitous answer, for instance, Lǐ Sì is a genius who always performs better than Zhāng Sān in all exams. So, in case that Zhāng Sān answered all the questions, it could not be seen as a pleasant result for Lǐ Sì that he answered only the majority of the questions. Therefore, what matters for a good antecedent of additive *yě* is not the distance of the scalar implicature between it and the host sentence, but rather it is still the argumentative orientation relative to the argumentative goal of the speaker. Meanwhile, the use of additive *yě* can enforce the same argumentative orientation, whether the host sentence and the antecedent share lexically identical elements or not.

Following the discourse similarity approach, the bad sentence (27) (previously as (10)) can be accounted for.

(27)**Lǐ Sì zhǐ yǒu yí-ge háizi,*
 Li Si only have one-CL child
Zhāng Sān yě yǒu yí-ge nǚér.
 Zhang San YE have one-CL daughter
 ‘Li Si has only one child, Zhang San has one daughter too.’

The infelicity of (27) can be attributed to the violation of the requirement of argumentative similarity due to the use of *zhǐ* ‘only’ in the antecedent. According to Anscombe and Ducrot (1983), the adverb ‘only’, similar to negation, reverts to the argumentative orientation of the sentence. Therefore, it is simply not possible for the antecedent in (27) to have the same argumentative orientation with the host sentence. The argumentative parallelism between the host sentence and the antecedent required by additive *yě* cannot be satisfied.

After establishing that similar argumentative orientation is the crucial factor to licensing the use of additive *yě*, we can now provide a different account for the cases concerning the (apparent violation of) the “one-distinction” requirement.

2.4.2 A new account for the “one-distinction” requirement

Now we can go back to sentence (17) which is reproduced here as (28):

- (28) **Zhāng Sān chī zhūròu, Lǐ Sì yě chī qīngcài.*
 Zhang San eat pork Li Si YE eat vegetable
 ‘Zhang San eats pork and Li Si also eats vegetable.’

Earlier, following previous accounts, I argued that this sentence is incorrect because of the one distinction requirement, but, as we have seen, this explanation does not suffice when explaining the behavior of additive particles like *yě*. Now, however, we can provide a new account: the infelicity of (28) stems from the difficulty to synchronize the argumentative orientation between the two clauses in (28) in any context. If the argumentative orientation of the two clauses can be determined and is directed towards the same argumentative goal, *yě* can in fact be licensed. For instance, suppose that the meat-lover Zhāng Sān and the vegetarian Lǐ Sì are required to eat something before they attend a sport match. One may want to confirm this by asking “Did Zhāng Sān and Lǐ Sì have something to eat?”. Then a possible answer can be:

- (29) *Zhāng Sān chī-le zhūròu, Lǐ Sì yě chī-le qīngcài.*
 Zhang San eat-PERF pork Li Si YE eat-PERF vegetable
 ‘Zhang San ate some pork and Li Si also ate some vegetable.’

Thus (28) can be rescued by providing a specific context in which the two clauses share the same argumentative orientation.¹³ Note that (29) is different from (28) in that the perfective aspect *le* has been added after the verb in both clauses of (29). By using *le* in both clauses in (29), both events are marked as having been completed. In the discourse of (29), it means that the argumentative goal “have eaten something” has been reached for both Zhāng Sān and Lǐ Sì. We have more clues to argue that both propositions can be regarded as having a positive orientation towards the argumentative goal. Therefore, in contrast to (28), the use of additive *yě* is legitimate in (29). The same reasoning applies to (18) and (19), here reproduced as (30) and (31).

¹³As is pointed out by Jenny Doetjes, there seems to be a discrepancy between (29) and its English translation, i.e., the English sentence can only make sense if it means that in addition to pork, Lǐ Sì also eat vegetable.

- (30) *Zhāng Sān* *chī-le* *yú,*
 Zhang San eat-PERF fish
Lǐ Sì *yě* *hē-le* *tāng.*
 Li Si YE drink-PERF soup.
 ‘Zhang San ate fish, and Li Si also had soup.’
- (31) *Zhāng Sān* *zuótiān* *zài-jīā* *chī-le* *yú,*
 Zhang San yesterday at-home eat-PERF fish
Lǐ Sì *jīntiān* *zài-fàndiàn* *yě* *chī-le* *yú.*
 Li Si today at-restaurant YE eat-PERF fish
 ‘Zhang San ate fish at home yesterday and Li Si also ate fish at a restaurant today.’

Consider (31) first. The two clauses in (31) share the same predicate. Though it violates the “one-distinction” requirement, *yě* can be used to express that the proposition in the host sentence has the same argumentative goal as its antecedent, that is, both of them ate fish. In fact, in order to guarantee that the two parts reach the same discourse goal, the additive particle is all the more necessary. According to Kaplan (1984), the more prominent the contrast between the host sentence and the antecedent, the more important it is to stress the discourse similarity between the two parts by adding an additive particle. When there are more than one contrasting pairs between the host sentence and its antecedent, it is more necessary to emphasize the similarity. It can be reflected by the intonational pattern of the sentences, as is observed by Liu (2009: 26): the accent in (30) falls on the additive particle itself instead of the contrasting elements, simply because that is the only identical element that the two clauses share.

2.4.3 *Yě...yě... construction*

Interestingly, we can add another *yě* in the first clause of (30) without changing the meaning. This special *yě...yě... construction* is referred to by Chao (1968) as one type of “correlative conjunction”.¹⁴ Consider (32) adapted from (30) and (33) from Biq (1989).

¹⁴ It is easy to relate the *yě...yě... construction* to the English coordinate structure *both...and...*. Yet I will not argue that the two patterns are each other’s equivalent. Firstly, not all *yě...yě...* can be translated into an English sentence using *both...and...* (consider (32)). In addition, unlike the *both...and...* structure, we can have more than two conjunctions in a sentence with *yě...yě...* (see (34)). More importantly, it has been pointed out that the two conjuncts in *both...and...* structures are asymmetric (e.g., de Vries 2005). In contrast, I argue that the members in the *yě...yě...* construction are parallel structures and are on an equal level.

- (32) *Zhāng Sān yě chī-le yú,*
 Zhang San YE eat-PERF fish
Lǐ Sì yě hē-le tāng.
 Li Si YE drink-PERF soup.
 ‘Zhang San ate the fish, and Li Si also had the soup.’

- (33) *Wǎn yě xǐ-le, zhuōzi yě cā-le,*
 bowl YE wash-PERF table YE wipe-PERF
hái yǒu shénme méi zuò de?
 still have what not do DE
 ‘The dishes are washed; the table is wiped, too. What else is there to do?’
 (Biq 1989: 4)

As noted by Biq (1989: 4), the two members in sentences like (32) or (33) are ordered as equals. The order between the two clauses is free. As a contrast, the relation between the two clauses coordinated by one *also* is asymmetric. Previously we also saw Mandarin examples (as in (9)) in which the sequence between the clauses cannot be switched and claimed that it is due to the anaphoric nature of additive particles. Plus, it is also hard to explain why *yě* can appear in the first clause without an antecedent at all. Moreover, as an anaphoric element, *yě* cannot refer to something which occurs after its host sentence. Thus, the anaphoric treatment of additive particles seems to encounter a challenge due to Mandarin sentences like (32) and (33). However, our discourse approach works here again. In line with Chao who termed this structure as a “correlative conjunction”, we may call *yě* in (32) and (33) a correlative marker. It marks the “discourse relation” between the two clauses (cf. Zeevat 2004). Following our analysis, they mark the same argumentative orientation relative to the discourse goal. The discourse or argumentative goal is clear from the context and can be referred to by both clauses of the *yě...yě...* construction. The active context can thus satisfy the antecedent requirement of the additive *yě* in both clauses. Since the argumentative similarity is identifiable at the level of discourse, which can be derived from the preceding discourse, the order between the two conjuncts in (32) and (33) is not important. It can also account for why additive *yě* can show up in the first clause without any antecedent. Indeed, we can have more than two members connected to *yě*, as long as they all share the same argumentative orientation, as is shown in (34).¹⁵

¹⁵ Note that (34) can be perfectly translated into a Dutch sentence with the *en...en...*

- (34) *Nimen yí-ge fàn gāngzi, yě chéng fàn, yě*
 you one-CL rice mug YE hold rice YE
chéng cài, yě xǐ liǎn, yě xǐ jiǎo,
 hold dish YE wash face YE wash feet
yě hē shuǐ, yě niào-pāo,
 YE drink water also pee
nà shì jiǎng-wèishēng ma?
 that is stress-hygiene SFP

‘You guys use this rice mug for holding rice, holding dishes, washing face, washing feet, drinking water and also as a urinal. How can you say that you pay attention to the hygiene?’

(Hou 1998: 617)

To sum up, I have argued that additive *yě* functions as a correlative marker that marks the similarity in argumentative orientation between the host sentence and its antecedent. Due to its anaphoric nature, the licensing of *yě* always requires a verifiable antecedent (it can be an active context too) that shares the same argumentative orientation as the host sentence. When there are lexically identical constituents between the two clauses, this “similarity” relation is explicit and only one *yě* in the second conjunct clause is necessary (or we may assume that there is also a non-overt *yě* in the antecedent);¹⁶ However, when there is no identical element, it is possible, at least in Mandarin, to have this marker in both clauses to mark and enforce the similarity reading between two clauses (I will further elaborate on this point when discussing Krifka’s Contrastive Topic Hypothesis in 2.7). An important finding has been, that the discourse conditions, viz., similarity in argumentative orientation, is a more fundamental condition to license the use of additive *yě* than similarity at the lexical level. Moreover, due to its discourse-anaphoric nature, it seems that the use of *yě* in the host sentence can exert an effect on its antecedent, for instance, to disambiguate the interpretation of the antecedent. I will present some examples to illustrate this point in the following section.

pattern, as shown below (translation by Jenny Doetjes):

Jullie gebruiken deze rijstkom EN voor rijst, EN voor andere gerechten, EN om je gezicht of voeten te wassen, EN om water uit te drinken EN om in te plassen. Hoe kan dan je zeggen dat je aandacht besteed aan hygiëne?

¹⁶ This hypothesis calls to mind Krifka’s (1999) assumption that there is a non-overt affirmative element “AFF_F” in the antecedent, which contrasts with the overt additive particle in the second clause.

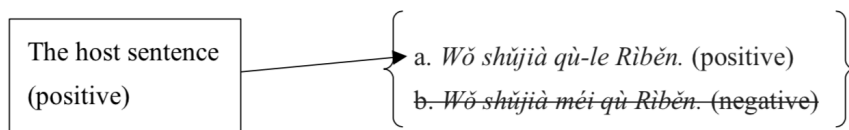
2.4.4 Confirmation effect of additive *yě* on its antecedent

Earlier on, we have seen examples showing that the presupposition of additive particles is not always explicitly identified in the antecedent. Due to this fact, the interpretation of the antecedent can sometimes be ambiguous. The following Mandarin sentences illustrate this point well:

- (35) A: *Tīngshuō nǐ shǔjià qù-le Riběn.*
 Hear.of you summer.vacation go-PERF Japan
 ‘I heard that you went to Japan during summer vacation.’
- B: *Wǒ yě qù-le Táiwān.*
 I YE go-PERF Taiwan
 ‘I went to Taiwan as well.’

The antecedent of the host sentence of *yě* is expressed by speaker A with a hearsay marker *tīngshuō* (literally ‘hear-say’). Hearsay evidentiality is often linked to epistemic modality (Palmer 1986: 51; Frajzyngier 1985, 1987). The hearsay adverb in (35A) indicates the speaker’s commitment to the truth of this proposition expressed by (35A) is weaker than the sentence without it. Therefore, (35A) provides two possible alternatives with different argumentative orientation, i.e., positive and negative, as the antecedent of the host sentence in (35B). However, the use of additive *yě* in the host sentence (35B) forces the selection of the positive proposition due to the same argumentative orientation requirement and consequently cancels the negative proposition. The confirmation effect of additive *yě* is illustrated in (36):

(36) Confirmation effect of additive *yě*



That is why even though (35B) is not a direct confirmation to speaker A whether speaker B has been to Japan or not, by articulating a sentence with *yě*, pragmatically, (35B) implies that what A heard from others is true, that is, B did go to Japan. If B gives an answer without *yě*, it is still a good answer in that context but with a very different implicature, as in (37).

(37) A: *Tīngshuō nǐ shūjià qù-le Rìběn.*
 hear.of you summer.vacation go-PERF Japan
 ‘I heard that you went to Japan during summer vacation.’

B: *Wǒ qù-le Táiwān*
 I go-PERF Taiwan
 ‘I went to Taiwan.’

The accented *TAIWAN* forms a contrastive relation with its corresponding element in (37A) and results in the exclusive implicature that Taiwan is the only place that “I” went to this summer. (37B) amounts to select the proposition with the negative argumentative orientation expressed in (37A).

Another observation provides additional evidence of the confirmation effect that the additive *yě* may sometimes have: due to the discourse role of the additive particle, the host sentence of *yě* helps to confirm or “complete” the antecedent clause. This has been demonstrated by (21), here repeated as (38):

(38) *Zhāng Sān yǒu yí-ge nǚér,*
 Zhang San have one-CL daughter,
Lǐ Sì yě zhǐ yǒu yí-ge hái-zi.
 Li Si also only have one-CL child
 ‘Zhang San has one daughter. Li Si has only one child too.’

Without the following clause with *yě*, the clause in the antecedent *Zhāng Sān yǒu yí-ge nǚér* ‘Zhang San has one daughter’ may have two interpretations, as is shown in (39):

- (39) a. Zhang San has one daughter and also other children.
 b. Zhang San has only one daughter and no other children.

(39a) is an inclusive reading while (39b) is an exclusive reading. Similar to the reasoning illustrated in (36), the host sentence of *yě* in (38) can select the exclusive reading in (39b) and thus (39a) is canceled. That is how we can interpret the antecedent in (38) as “all *Zhāng Sān* has is one daughter” even without the word *zhǐ* ‘only’ in this sentence.

Sentence (40) provides another example: *yě* contributes to “completeness” of the antecedent sentence lacking an aspect particle. Consider (40):

- (40) a. *Zhāng Sān bǎ huā bǎi zài-zhuōzi-shang,*
 Zhang San BA flower put on-table-top
Lǐ Sì yě bǎi le.
 Li Si YE put SFP
 ‘Zhang San has put flowers on the table, so has Li Si.’
- b. *Zhāng Sān bǎ huā bǎi zài-zhuōzi-shang,*
 Zhang San BA flower put on-table-top
Lǐ Sì yě zài bǎi.
 Li Si YE PROG put
 ‘Zhang San is putting flowers on the table, so is Li Si.’
- c. **Zhāng Sān bǎ huā bǎi zài-zhuōzi-shang,*
 Zhang San BA flower put on-table-top
Lǐ Sì què méi bǎi.
 Li Si in.contrast not put

Lacking an aspect particle, the first clause in all sentences of (40) is aspectually underspecified, as it denotes at least the following two readings:¹⁷

- (41) a. *Zhāng Sān bǎ huā bǎi-zài-le zhuōzi-shang.*
 Zhang San BA flower put-on-PERF table-top
 ‘Zhang San has put flowers on the table.’
- b. *Zhāng Sān zài bǎ huā bǎi-zài zhuōzi-shang.*
 Zhang San PROG BA flower put-on table-top
 ‘Zhang San is putting flowers on the table.’

In (41), the aspect particles have been added which are missing in (40). What explains the difference between (40a) and (40b) on the one hand and (40c) on the other? Note that in (40a) and (40b) the first clause has the same aspectual reading as that in the follow-up sentence, the host sentence of *yě*. What happens here is similar to what happened in (35) and (38). Namely, due to its function in synchronizing the argumentative orientation, the use of additive *yě* in the second clause of (40a) and (40b) confirms the interpretation of the first

¹⁷ Without the follow-up sentence, the first clause would be ungrammatical (in any case, “incomplete”), but that is not of relevance to the discussion in the main text. For discussion, see Tsai (2008), Sybesma (2020).

clause by projecting the aspect of the second clause into the first one.¹⁸(40c) contrasts with (40a) and (40b) in this respect. The two parts in (40c) are conjoined by the adverb *què* ‘in contrast’ rather than the additive *yě*. The second clause in (40c) is grammatical; it contains the negative perfective auxiliary verb *méi*. However, without *yě*, the perfective reading of the second clause in (40c) cannot help to disambiguate the first part. This contrast shows that additive *yě* can affect the interpretation of the antecedent by forcing its antecedent to partially share the meaning of the host sentence.

In this section, I have presented three examples to illustrate the confirmation effect of additive *yě*. I have argued that this effect should be attributed to the discourse role that an additive particle has. Namely, the additive particle, by its anaphoric nature, always requires an antecedent that shares the same argumentative orientation with the host sentence and enforces this interpretation when the interpretation of the antecedent is ambiguous. So far, we have established the argument that additive *yě* is an anaphoric element with a discourse role and discussed the conditions of a viable antecedent for it.

Meanwhile, as a focus particle, additive *yě* is closely related to the focus constituent in the host sentence. In the following section, I will discuss in detail how additive *yě* interacts with other constituents in the host sentence.

2.5 Stressed and unstressed additive *yě*

In this section, I discuss the relation between additive particles and their associated/focus constituents. In line with Reis and Rosengren (1997: 241), the associated constituent of additive adverbs like German *auch* and Chinese *yě* is called an “added constituent” (AC): it is the “variable material” or the

¹⁸ Interestingly, the confirmation or amelioration effect on aspect seems to be restricted to clauses that together make up a compound sentence, like those in (40a) and (40b). For instance, the cross-clausal salvaging effect disappears if the clauses in question are clearly two different sentences, as is clear from the following conversation (provided by Huba Bartos, p.c.):

A: **Zhāng Sān bǎ huā bái zài-zhuōzi-shang.*
 Zhang San BA flower put on-table-top
 Intended: ‘Zhang San is putting flowers on the table.’

B: (En, zhīdao), *Lǐ Sì yě zài bái.*
 um know Li Si YE PROG put
 ‘(Yup, I know,) Li Si is doing so, too.’

new element(s) in the host sentence of the additive particle compared with the antecedent alternative propositions. The other elements in the host sentence of the additive particle are identical to the corresponding elements in the antecedent sentence and are thus called “identical material” (ID).¹⁹ It is a well-known fact that in many languages there are two orders between additive particles and ACs, that is to say, the AC can occur after the additive particle (“ADD AC” order) and the AC can occur before the additive particle (“AC ADD” order). Along with this observation, it has been noticed that prosodic features are also involved: the additive particle is often unstressed in the “ADD AC” order and stressed in the “AC ADD” order (Reis and Rosengren 1997; Krifka 1999; Gast 2006, a.o.). In light of the two orders and the stress factor, a following question will be whether the additive particles in the two orders have the same interpretation. In this section, I will first introduce the “ADD AC” order with an unstressed additive particle and investigate how the relation is established. Then I will discuss the “AC ADD” with a stressed additive particle and Krifka’s (1999) Contrastive Topic Hypothesis. Finally, I put forth the argument that stressed *yě* and unstressed *yě* basically have the same meaning and function in line with Umbach (2012). Before entering the discussion on *yě*, I will outline the two orders in German as discussed by Reis and Rosengren (1997).

2.5.1 Two orders between an additive and the AC

At first glance, the distribution of additive particles and the ACs varies in different languages and it seems that there is no universal regularity at all. In some languages, there is more than one additive particle. For instance, French additive particle cannot be placed before its AC. The additive particle in Czech and Hebrew can occur either before or after the AC with a different stress pattern. The additive particle in Swahili only occurs in a sentence-final position and is always stressed (Krifka 1999: 112). Mandarin only has one, pre-verbal, additive particle, *yě*. In English, at least three corresponding elements are often discussed: *also*, *too* and *as well*. Among them, *also* predominantly takes up a central position in the clause while *too* and *as well* primarily appear in sentence final position (Quirk et al. 1985: 609-610; Huddleston and Pullum 2002: 592-595; Gast 2006). What complicates matters is that some languages feature both stressed and unstressed additive particles, such as German, Dutch and Mandarin. As Gast (2006) remarks, in some

¹⁹ As discussed earlier, not all host sentences of additive *yě* have IDs, especially in the *yě...yě* sentences. For discussion purposes, the examples in this section are mostly sentences with ID constituent.

European languages, additive particles are usually unstressed when they precede the AC constituent while they bear stress when they follow it.

The case of German *auch* has been discussed extensively (Reis and Rosengren 1997; Krifka 1999; Dimroth 2002; Umbach 2012). In German, the unstressed additive particle *auch* can only occur to the left of its AC, regardless of the syntactic position of the AC in the clause. For instance, *auch* can appear to the left of an AC, which functions as the subject of a sentence. Consider the following example from Reis and Rosengren (1997):

- (42) *Auch*[Peter]_{AC} *hat das Buch gelesen. (nicht nur PAUL)*²⁰
 also Peter has the book read not only Paul
 ‘Peter, too, has read the book.’ (not only Paul)
 (Reis and Rosengren: 241)

In most cases, the AC bearing the stress occurs to the right of *auch* as is shown in (42); it is ungrammatical the other way around. See (43).

- (43)* [PEter]_{AC} (*auch*) *hat (auch) das Buch gelesen.*
 Peter also has also the book read
 (Reis and Rosengren 1997: 241)

Conversely, stressed *AUCH* typically follows its AC, and has the ID materials to its right, as is shown by (44), in which “Peter” is the AC. And if the AC is “das Buch”, then the sentence becomes infelicitous, as is demonstrated in (45).

- (44) [Peter]_{AC} *hat AUCH das Buch sofort gelesen.*
 Peter has auch the book immediately read
 ‘Peter read the book immediately too.’
- (45)* *Peter hat AUCH [das Buch]_{AC} sofort gelesen.*
 Peter has also the book immediately read
 (Reis and Rosengren 1997: 241)

According to Reis and Rosengren’s observations, German stressed and unstressed additive particles are in complementary distribution with respect to their position relative to the AC/ID materials. They propose a simple regularity:

²⁰ In this section, I shall use [...]_{AC} to mark the AC. When I want to emphasize that the AC is the focus or “contrastive topic” (CT) of the sentence, you will also see the notation [...]_F or [...]_{CT}.

(46) The last element in the *Auch*/AC pair must carry the nuclear accent, the first element may carry a secondary accent.²¹

(Reis and Rosengren 1997: 243)

From (46), it seems that the stress on an additive particle is merely a consequence of the distribution order between the additive particle and the AC, i.e., linearly the second member of the {AC, ADD} pair has the stress.

If the ID materials are also included, we can get the following combination patterns:

(47) a. (ID) *auch* (ID) AC^{stressed} (ID)

b. (ID) AC (ID) *AUCH* (ID)

(Reis and Rosengren 1997: 244)

From the regularity displayed in (46) and (47), we can see that:

1) the position of AC is placed at exactly the opposite direction in the sentences of unstressed *auch* and stressed *AUCH*, i.e., to the right of the former and to the left of the latter.

2) there is no AC material bearing the stress to the left of *auch* and to the right of *AUCH*. In Reis and Rosengren's words, "*AUCH* requires that AC is (totally) to its left, ruling out a further accent to its right" (Reis and Rosengren 1997: 248). In other words, to the right of stressed *AUCH* there is only ID.

Another relevant phenomenon concerning the interaction between additive (or all focus) particles and their AC is the positional **adjacency** between them. This tendency is quite clear in German and Dutch (for Dutch examples, see Bergsma 2006: 331), especially in the case of unstressed additive particles. Have a look at the German sentences in (48) in which *auch* has its AC right-adjacent and it can appear in different syntactic positions in its host sentence.

²²

²¹ Considering the fact that sometimes we may have a split AC, namely, one part of AC being to the right of *auch* and the other part being to the left, as pointed out by Reis and Rosengren, the regularity in (46) and (47) only pertains to *auch* in relation to the AC constituent bearing the nuclear accent.

²² According to Reis and Rosengren (1997: 242), there are also cases of optional non-adjacency in spoken German. However, these sentences seem to be degraded.

- (48) a. *Auch* [*Peter*]_{AC} *hat das Buch gelesen.* (*nicht nur PAUL*)
 also Peter has the book read not only Paul
 Peter, too, has read the book. (not only Paul)
- b. *Peter hat das Buch auch [geLEsen]*_{AC}.
 Peter has the book also read
 (*nicht nur geKAUFT*)
 not only bought
 Peter has also read the book. (not only bought it)
- c. *Peter hat auch [das BUCH]*_{AC} *gelesen.*
 Peter has also the book read
 (*nicht nur die ResenSION*)
 not only the review
 Peter has also read the book. (not only the review)
- d. *Peter hat auch [dem Paul ein BUCH gekauft]*_{AC}.
 Peter has also for Paul a book bought
 (*nicht nur dir das Essen bezahlt*)
 not only you the meal treat
 Peter also bought a book for Paul. (not only treated you to the meal)
 (Reis and Rosengren 1997: 241)

According to Reis and Rosengren, in contrast with its unstressed counterpart, the stressed *AUCH* allows non-adjacency between the proposed AC and *AUCH*. Consider (49),

- (49) *Peter hat das Buch AUCH sofort gelesen.*
 Peter has the book also immediately read
 ‘Peter also read the book immediately.’
 (Reis and Rosengren 1997: 242)

In the following section, I am going to investigate whether the distributional regularity of AC/ID and the additive particles found in German applies to Mandarin as well. Due to the fact that Mandarin *yě* is distributionally more limited than *auch*, it would seem unlikely that the phenomenon of the adjacency between the additive particle and the AC observed from German and Dutch is there in Mandarin as well. In addition, I will discuss whether it is necessary to separate stressed *yě* from unstressed *yě*.

2.5.2 Mandarin unstressed *yě* and its AC

Clear examples in German show that the unstressed additive particle is usually left-adjacent to the AC that it is associated with and can occupy different positions in the sentence. Meanwhile, as the focus, the AC usually bears the accent. Different from German, Mandarin additive particle *yě* is distributionally more restricted. Its syntactic position will be explored in the following chapter. Simply put (for details, see Chapter 4), Mandarin *yě* can never occur before the subject or after the verb. The following sentences show how *yě* interacts with the AC/focus and the AC/ID pattern is spelled out.

50. a. *Zhāng Sān mǎi-le yì-zhāng huà,*
 Zhang San buy-PERF one-CL picture,
yě mǎi-le [yì-běn SHU]_F
 YE buy-PERF one-CL book
 ‘Shang San bought a picture, and he also bought a book.’
 (ID) *yě* ID [AC]_F

- b. **Zhāng Sān mǎi-le yì-zhāng huà,*
 Zhang San buy-PERF one-CL picture,
mǎi-le yě [yì-běn SHU]_F.
 buy-PERF YE one-CL book

51. *Zhāng Sān mài-le yì-běn shū,*
 Zhang San sell-PERF one-CL book,
yě [Mǎi]_F -le yì-běn shū.
 also buy-PERF one-CL book
 ‘Zhang San sold a book, and he also bought(new) one.’
 (ID) *yě* [AC]_F ID

52. *Zhāng Sān hē-le diǎnr kāfēi,*
 Zhang San drink-PERF little coffee,
yě [Mǎi]_F -le bēn SHU]_F.
 also buy-PERF CL book
 ‘Zhang San drank some coffee and he also bought a book.’
 (ID) *yě* [AC]_F

53. a. *Zhāng Sān* *gěi* *Lǐ Sì* *mǎi-le* *yì-běn shū*,
 Zhang San to Li Si buy-PERF one-CL book
yě [*gěi WANG WU*]_F *mǎi-le* *yì-běn*
 YE to Wang Wu buy-PERF one-CL
 ‘Zhang San bought a book for Li Si and also bought one for Wang Wu.’
 (ID) *yě* [AC]_F ID ID
- b.* *Zhāng Sān* *gěi* *Lǐ Sì* *mǎi-le* *yì-běn shū*,
 Zhang San to Li Si buy-PERF one-CL book
 [*gěi WANG WU*]_F *yě* *mǎi-le* *yì-běn shū*.²³
 to Wang Wu YE buy-PERF one-CL book
 *(ID) [AC]_F *yě* ID ID
54. a. *Zhāng Sān* *xùnsù-de* *yě* [*YUKUAI-de*]_F
 Zhang San fast YE happily
mǎi-le *yì-běn shū*.
 buy-PERF one-CL book
 ‘Zhang San buy a book fast and happily.’
 (ID) *yě* [AC]_F ID ID
- b.* *Zhāng Sān* *xùnsù-de*, [*YUKUAI-de*]_F
 Zhang San fast happily
yě *mǎi-le* *yì-běn shū*.
 YE buy-PERF one-CL book
 *(ID) [AC]_F *yě* ID ID

In all sentences (50)-(54), the unstressed additive particle is followed by its AC. The pitch accent on the AC signals that it is the focus or the focused exponent of a larger constituent (Selkirk 1984, 1995). It is obvious that unstressed Mandarin *yě* can associate with different syntactic elements in the sentence.²⁴ Note that there is no “subject as the AC” case in (50) - (54), which

²³ Judgments are affected by the fact that changing the stress pattern leads to a change of meaning, which is not always taken into account. For instance, (53b) is not so bad if Wang Wu is the most unlikely person (for the speaker) whom Zhang San would ever buy a book for. In the following section, I will argue that scalarity is involved in this situation.

²⁴ Mandarin might be different from what Jacobs (1983) and Büring and Hartmann (2011) observe, namely that German *auch* tends to adjoin to non-arguments, e.g., VPs, IPs, APs and root CPs. However, I will not discuss this.

will be discussed later, but it can already be seen from (55) that unstressed *yě* cannot have a subject AC to its right due to its syntactic restrictions:

- (55)**Yě* [*Bǐdé*]_{AC} *dú-le zhè-běn shū.*
 YE Peter read-PREF this-CL book
 ‘Peter, too, has read the book.’

Interestingly, by examining the AC/ID pattern from (50) to (54), the AC/ID pattern of Mandarin unstressed *yě* can be summarized as (56), which is basically the same as (47a) which also applies to German unstressed *auch*.

- (56) (ID) *yě* [AC]_F (ID) (ID)

The examples presented above naturally boil down to the distributional rules of unstressed *yě*. Firstly, unstressed *yě* always has the AC to its right and the mixture of ID and AC elements can only appear to the right. Secondly, all elements to the left of unstressed *yě* are IDs. Thirdly, there might be more than one AC constituents to the right of unstressed *yě*, but the nuclear accent falls on the whole AC or one element in the scope of the AC. The data in Mandarin also supports the information structural role that Féry (2012: 423) proposes for *auch*, i.e., association-with-focus.

In this section, I have examined the distribution of unstressed *yě* and AC/ID in Mandarin and showed the similarity with the pattern displayed by German *auch*. As expected, it behaves exactly like a focus particle. The following sections will present an overview of how stressed *yě* interacts with its preceding AC and discuss the question whether stressed *yě* is a different particle from its unstressed counterpart, as Liu (2009) argues (see below).

2.5.3 Mandarin stressed *YE* and the Contrastive Topic Hypothesis

The German stressed *AUCH* has the following pattern with respect to its ID/AC distribution according to Reis and Rosengren (1997), as is repeated here in (58):

- (58) (ID) AC (ID) *AUCH* (ID)

Now let’s consider the case of stressed *YE* and compare it to German *AUCH*.
 25

²⁵ From now on, I will use *YE* to represent stressed *yě* to distinguish it from the unstressed variant.

- (59) *Zhāng Sān mǎi-le yī-běn shū,*
 Zhang San buy-PERF one-CL book,
Lǐ Sì YE mǎi-le yī-běn.
 Li Si YE buy-PERF one-CL.
 ‘Zhang San bought a book and Li Si also bought one.’

From (59), we can see that similar to German *AUCH*, stressed *YE* has its AC, *Lǐ Sì* in (59), which contrasts with the topic/subject in the antecedent, to its left and the accent is placed on the additive particle itself.

It has been argued that a stressed additive particle is associated with a contrastive topic (Krifka 1999). Krifka’s hypothesis is cited here as (60).

- (60) Contrastive Topic Hypothesis (CTH):
 The associated constituent of a stressed postposed additive particle is the contrastive topic of the clause in which they occur.
 (Krifka 1999: 113)

Like other contrastive topics, the AC of the stressed additive particle often bears a rising or secondary accent. However, the secondary accent is not always there. Krifka (1999: 116) remarks that the reason that a contrastive topic need not always be marked by an accent is related to its syntactic position, i.e., it is often realized by the subject of the clause, as is illustrated in (59). Note that “topic” used by Krifka is not used in exactly the same way as it is usually used in Chinese linguistics. The following Mandarin sentences with a stressed *yě* will show that the contrastive topic can be any constituent as long as it precedes *yě/auch*:

- (61) *Zhāng Sān báitiān kàn shū,*
 Zhang San daytime read book
tā [wǎnshàng]_{CT} YE kàn shū.
 he evening YE read book
 ‘Zhang San reads books during daytime and he does the reading in the evening too.’

- (62) *Zhāng Sān xǐhuān kàn Měiguó diànyǐng,*
 Zhang San like see the U.S. film
[Fǎguó diànyǐng]_{CT} tā YE xǐhuān.
 France film he YE like
 ‘Zhang San likes to watch American films, and likes French films as well.’

The AC of stressed *YE* is realized by a temporal adverb in (61) and an object in (62). Neither of them is in the subject position because there is a subject pronoun following them in both sentences. Note that the contrastive topic in (61) and (62) can also be marked intonationally such that a boundary effect can be observed, but this is not necessary. Indeed, just like in German (Krifka 1999: 117), the AC of the stressed *YE* can also be non-overt. Consider (63):

- (63) A: *Zhāng Sān xǐhuān kàn Měiguó diànyǐng.*
 Zhang San like see the U.S. film
Fǎguó diànyǐng ne?
 France film SFP
 ‘Zhang San likes watching American films. How about French films?’
- B: [\emptyset]_{CT} *YE xǐhuān!*
 YE like
 ‘He also likes!’

In (63), there is no overt AC of the additive particle in the host sentence of *YE*. However, the additive particle still bears the stress. It can be assumed that there is a non-overt contrastive topic preceding *YE*. Krifka (1999: 118) suggests that stressed additive particles can be seen as **contrastive topic indicators**. It seems so in Mandarin too, i.e., with the aid of stressed *YE*, the contrastive topics need not always be marked by an accent as in (61) – (62) and can sometimes be non-overt, as in (63).

The CTH provides an account for the necessity of an additive particle in the second clause. According to Krifka, contrastive topics often give rise to the “distinctiveness” implicature which requires the predicates of the topics to be different. The “distinctiveness” is defined by Krifka as below:

- (64) If [...T_F...C_F...] is a contrastive answer to a question Q, then there is no alternative T’ of T such that the speaker is willing to assert [...T’...C...]. (Krifka 1999: 122)

(64) is related to the Gricean Maxim of Manner: if a speaker knows that there is an alternative T’ which is also true in context C, then the speaker will utter the assertion [...T ^ T’...C...] instead of [...T...C...] ^ [...T’...C...] simply because the former is shorter. This can be illustrated by (65). Suppose that the speaker B knows that both *Zhāng Sān* and *Lǐ Sì* bought a book. To answer A’s question, (65B) is good and (65B’) sounds redundant due to the violation of Gricean Maxim of Manner. However, (65B’) can be rescued by adding a stressed *YE* after the contrastive topic in the second clause, as in (65B’').

- (65) A: *Zhāng Sān hé Lǐ Sì mǎi-le shénme?*
 Zhang San and Li Si buy-PERF what
 ‘What did Zhang San and Li Si buy?’
- B: *Zhāng Sān hé Lǐ Sì dōu mǎi-le yì-běn shū.*
 Zhang San and Li Si both buy-PERF one-CL book
 ‘Both Zhang San and Li Si bought a book.’
- B’: **Zhāng Sān mǎi-le yì-běn shū,*
 Zhang San buy-PERF one-CL book
Lǐ Sì mǎi-le yì-běn.
 Li Si buy-PERF one-CL
 Intended: ‘Zhang San bought a book, and Li Si bought a book too.’
- B’’: *Zhāng Sān mǎi-le yì-běn shū,*
 Zhang San buy-PERF one-CL book
Lǐ Sì YE mǎi-le yì-běn.
 Li Si YE buy-PERF one-CL
 ‘Zhang San bought a book, and Li Si bought a book too.’

According to Krifka, adding an additive particle, which realizes an “affirmative” element explicitly just like *did* and *certainly*, can “allow us to get around the distinctiveness constraint” by emphasizing the discourse relation between the two clauses (Krifka 1999: 122). Krifka also assumes that there is a non-overt affirmative element as the focus in the antecedent, which contrasts with the overt additive particle in the second clause and is identified as AFF_F. For instance, the antecedent of (65B’’) can be written as (66):

- (66) [*Zhāng Sān*]_{CT} *mǎi-le yì-běn shū* AFF_F.
 Zhang San buy-PERF one-CL book
 ‘Zhang San bought a book.’

This assumption connects to my earlier claim that *yě* as a correlative marker (which can be non-overt in the antecedent) marks the similarity in argumentative orientation between the host sentence and its antecedent, for instance, it is especially obvious in the Mandarin *yě...yě...* construction, in which the first *yě* can be seen as an explicit realization of AFF_F. Our discourse analysis is in fact consistent with Krifka’s claim that the function of *too* is to emphasize the “discourse relation” between the two clauses. The function of an additive particle as proposed by Krifka is essentially in line with Kaplan’s claim that the discourse function of *too* is to emphasize the similarity between the two contrasting items (Kaplan 1984: 515). My statement in the previous

section that Mandarin *yě* denotes similarity of argumentative orientation can also be seen as an elaboration of the discourse function.

2.5.4 Challenges to CTH

Meanwhile, Krifka's contrastive topic hypothesis has been challenged. Reis and Rosengren (1997) and Saebo (2004) and others have pointed out that stressed additive particles are not always associated with contrastive topics. However, upon closer scrutiny, all possible counterevidence can be refuted. The first example is from Saebo (2004: 207), who finds that a topic in a sentence with *too* can be a "continuing topic" in the sense that it is not contrastive to the preceding topic in the antecedent, which is different from the "distinctiveness" required by contrastive topics. Consider sentence (67).

- (67) So now you see what I meant about Lego blocks. They have more or less the same properties as those which Democritus ascribed to atoms. And that is what makes them so much fun to build with. They are first and foremost indivisible. Then they have different shapes and sizes. They are solid and impermeable. They also have 'hooks' and 'barbs' so that they can be connected to form every conceivable figure. These connections can later be broken so that new figures can be constructed from the same blocks. [. . .] We can form things out of clay **(too)*, but clay cannot be used over and over, because it can be broken up into smaller and smaller pieces. (Saebo 2004: 207)

"Out of clay" in the host sentence of *too* can be seen as a "continuing topic" (thus not contrasting) of "out of Lego blocks" mentioned in the first paragraph. Saebo claims that "out of clay" is not a contrastive topic simply because we cannot get the proposition that we can only form things out of Lego blocks in the first paragraph, thus no "distinctiveness" can be found. However, sentence (67) cannot be used as a counterexample to the contrastive topic hypothesis for the following reasons. English *too* predominantly takes up a sentence-final position and necessarily has its AC preceding it. Therefore, it is accented in most cases. It cannot be seen as a good candidate to discuss the variation between stressed and unstressed additive particles like German *auch*. The role of *too* in (67), unlike stressed additive particles, is more like the unstressed *also* or *auch*, which according to Reis and Rosengren (1997) denotes the meaning "in addition". It is then not surprising that the host sentence of *too* expresses a continuing topic. For instance, the sentence with *too* in (67) can be rewritten into (68):

- (68) a. In addition, we can form things out of clay.
 b. We can also form things out of clay.

Two other pieces of possible counterevidence from Reis and Rosengren (1997: 249) (cf. Féry 2012: 438) and represented here in (69) and (70):

- (69) *Ich stand vor dem Eingang,*
 I stood before the entrance
und [wer]_{CT?} stand da plötzlich AUCH?
 and who stood there suddenly also
 ‘I stood in front of the entrance, and who suddenly appeared?’

- (70) *Er bat sie, [Ø]_{CT?} AUCH zu kommen.*
 he asked her also to come
 ‘He asked her to come, too.’

Reis and Rosengren argue that the associated constituent of stressed *AUCH* in (69) is a question word which is not referential. Therefore, it cannot be a contrastive topic. Umbach (2012: 9) disagrees and argues that the question in (69) is in fact a “show master” question, which presupposes that the speaker is familiar with the answer. That is to say, it’s not completely non-referential. Because stressed *AUCH* requires a contrastive topic, it also imposes a referential interpretation on the usually non-referential *wh*-word. This is a very interesting observation. It is in fact not so unusual that a *wh*-subject may have an actual individual reading, for instance, in an episodic environment, as pointed out by Lin (1996: 90). Consider (71):

- (71) a. **Shéi dōu zài chànggē?*
 who DOU PROG sing.song
 b. *Shéi YE zài chànggē?*
 who also PROG sing.song
 ‘Who is also singing?’
 (cf. Lin 1996: 89)

According to Lin, a *wh*-phrase in a sentence with the *wh...dōu* pattern expressing a universal reading, denotes possible individuals rather than actual individuals. In an episodic environment, as marked by a progressive aspect *zài* in (71), the *wh*-subject has an actual individual reading, thus (71a) is bad. However, stressed additive particle *YE* is fine in the episodic context. By using

YE in (71b), the sentence presupposes that there is one specific person who is singing and the speaker knows it, in other words, this is a ‘show master’ question too.

Similarly, (70) cannot be an example either to show that stressed *AUCH* does not need a contrastive topic. Reis and Rosengren and Féry argue that there is no explicit element before stressed *AUCH* that could be a topic in (70). But following Krifka (1999), we can assume that there is a non-overt or implicit contrastive topic in front of *AUCH* in (70).²⁶

Here I can provide another observation to substantiate the contrastive topic hypothesis. It has been observed (e.g., Hoeksema and Zwarts 1991) that focus particles are sensitive to the semantic property of their focused constituents. For instance, only in English one cannot modify indefinite quantifiers like *someone* or *everyone*:

- (72) a. *Only someone objected to the proposal.
 b. *Only everyone was present at the meeting.
 (Hoeksema and Zwarts 1991: 62)

As Hoeksema and Zwarts point out, Dutch stressed *OOK* has a parallel performance, as is presented below:

- (73) a. [*De slager*]_{AC} *heeft* *OOK* *iemand* *gehoord*.
 the butcher has too someone heard
 ‘The butcher heard someone too.’
- b. **Iemand* *heeft* *OOK* *de* *slager* *gehoord*.
 someone has too the butcher heard
- (74) a. [*De minister*]_{AC} *heeft* *OOK* *iedereen* *voorgesteld*.
 the minister has too everyone introduced
 ‘The minister introduced everyone too.’
- b. **Iedereen* *heeft* *OOK* *de* *minister* *voorgesteld*.
 everyone has too the minister introduced
 (cf. Hoeksema and Zwarts 1991: 63)

Not only the AC of *OOK* in the subject position cannot be an indefinite phrase, but the one in the object position cannot either. Consider (75),

²⁶ Hole (2004: 157-160) has discussed some naturally occurring implicit contrastive topics; but with *jiiù*, not with *yě*.

- (75) a. *Hans heeft [de slechte film]_{AC} OOK gezien.*
 Hans has the bad film OOK seen
 ‘Hans also saw the bad movie’
- b. **Hans heeft een slechte film OOK gezien.*
 Hans has a bad movie too seen

Mandarin stressed *YE* displays a similar behavior, as illustrated in (76),

- (76) a. **Měi-ge rén YE lái-le.*
 Every-CL person YE come-PERF
- b. **Yí-ge rén YE lái-le.*
 One-CL person YE come-PERF

Hoeksema and Zwarts (1991) argue that indefinite quantifiers like *someone* or *everyone* cannot be contrasted with other quantifiers of a similar type. In Krifka’s terms, this is because indefinite quantifiers cannot be a contrastive topic, therefore, they cannot function as the AC of stressed *OOK* or *YE*. Therefore, Krifka’s contrastive topic hypothesis can be maintained and it can also be applied to Mandarin.

What I want to add is that, although a stressed additive particle can be seen as a contrastive topic indicator, it does not mean that all elements before it are necessarily contrastive topics. However, the stressed additive particle is only associated with the ONE contrastive topic, and other elements, ID or AC, are irrelevant to the additive particle. It is quite obvious if we consider (61) and (62), besides the contrastive topics there is still a subject, which is an identical constituent with the antecedent. So, the AC/ID distributional pattern of (61) and (62) can be written as below:

- (77) [AC]_{CT} ID₁ *YE* ID₂

Interestingly, Liu (2009: 46) finds that stressed *YE* allows more than one different constituent to its left. Consider (78):²⁷

²⁷ Huba Bartos (p.c.) suggests that the unexpected acceptability of sentences which have more than one AC may be understood if we take the different contrasted constituents as a contiguous sequence, i.e., as a kind of single syntactic unit, in the two parallel clauses. Thus, (78) (and in (19) above), may involve a single ‘super AC’ comprising the three different ACs. This is an interesting suggestion, that I look into in the future.

- (78) *Lǐ Sì zuótiān zài-jīā kàn-le nà-běn shū,*
 Li Si yesterday at-home read-PERF that-CL book
Zhāng Sān jīntiān zài-xuéxiào YE kàn-le nà-běn shū.
 Zhang San today at-school YE read-PERF that-CL book
 ‘Li Si read that book at home yesterday, and ZhangSan read that book
 today at school too.’
 (Liu 2009: 46)

There are three added constituents to the left of stressed *YE* in its host sentence, which form three contrasting pairs with the antecedent clause. The AC/ID pattern of (78) can be written as:

- (79) AC₁ AC₂ AC₃ *YE* ID₁ ID₂

Although there can be more than one AC constituent to the left of stressed *YE*, as we pointed out earlier, there is only one AC which can be seen as the contrastive topic, which is a priori determined by the context and can be marked by prosodic prominence. In (78), only one of them can be pronounced with a secondary accent. Other ACs are less important and cannot be emphasized by any accent. Instead, intuitively, these less relevant ACs will be articulated with a faster speed. In short, all other non-contrastive-topic ACs must be de-accented. Therefore, the AC/ID regularity of stressed *YE* can be summarized as (80).

- (80) ([AC]_{CT}) (AC) (ID) *YE* ID (ID)

From the pattern in (80), we can see that the associated constituent of stressed *YE* (which can be non-overt) is always to the left of it and forms a contrastive topic with the topic in the antecedent. Further, all identical constituents are to the right of stressed *YE*. If we put AC/ID patterns of stressed *YE* and unstressed *yě* together as in (81), we can find that Mandarin stressed and unstressed *yě*s display a “mirror image”, i.e., they are in complementary distribution concerning the positions of AC and ID.

- (81) **AC/ID patterns of stressed *YE* and unstressed *yě***
 ([AC]_{CT}) (AC) (ID) *YE* ID (ID)
 (ID) *yě* [AC]_F (ID) (ID)
-

Then a natural question will be: shall we treat the stressed and unstressed version of *yě* as two different particles? The next section will try to answer this question.

2.5.5 Stressed *YE* vs. unstressed *yě*: two different particles?

Reis and Rosengren (1997) argue that there is only one *auch*, despite the existence of \pm accent variants. According to them, it denotes a non-implicated and truth-relevant meaning, which is, in their terms, “ADD” (Reis and Rosengren 1997: 274). However, they also argue that two different utterance meanings arise depending on whether we have stressed *AUCH* or unstressed *auch*. They argue that this difference is due to the different AC/ID patterns. The utterance meaning of unstressed *auch* will be “in addition / furthermore”, because it adds the AC materials to its alternative in the background; the utterance meaning of stressed *AUCH* is “likewise” (Reis and Rosengren 1997: 294). It adds only ID materials and thus emphasizes the aspect of sameness between the host sentence and the antecedent. In line with the distinction of the two utterance meanings, Féry (2012: 423) claims that *AUCH/auch*, just like two other German particles, *selbst* ‘self/even’ and *wieder* ‘again’, has two different information structure roles, i.e., association-with-focus and free focus, which results in their different performance in accent status and word order. She associates the ‘in addition/furthermore’ to the focus-sensitive particle, thus unstressed *auch* is a “truly additive” particle (Féry 2012: 437). She correlates the meaning of stressed *AUCH* ‘likewise’ to the free focus use, and she also argues that the accent on *AUCH* implies that it is affiliated to a “verum focus” (Höhle 1988, 1992). A verum focus is usually marked by accent to affirm the whole proposition and requires all other constituents in the clause to be deaccented. For instance, in (82B), the finite verb *ist* ‘is’ carries the verum focus of the sentence.

- (82) A: *Maria ist nicht in Rom, Tom hat sie gestern gesehen.*
 Maria is not in Rome Tom has her yesterday seen
 ‘Maria is not in Rome. Tom saw her yesterday.’
- B: *Doch, Maria IST in Rom.*
 Sure, Maria is in Rome.
 ‘But Maria IS in Rome.’
 (Féry 2012: 439)

By the same token, Liu (2009) makes a clear-cut distinction between stressed *YE* and unstressed *yě*. According to her, the stressed *yě*, being a focus operator,

adds AC constituents to the discourse. However, stressed *YE* is treated as a scope particle whose range solely contains ID materials.

In view of the above proposals, the main difficulty to have a unified semantic account of the two variants lies in the fact that the stressed additive particle is associated with constituents preceding it, thus it is not like a normal focus particle which interacts with the focus in its scope. However, as I pointed out in section 2.4, a necessary condition and motivation to license the use of additive *yě* is the discourse similarity between the host proposition and the antecedent. The use of *yě* is therefore to indicate the argumentative similarity instead of lexical similarity. From the perspective of Rooth's alternative semantics, the alternatives that additive particles trigger are also propositions instead of isolated constituents. Therefore, stressed *YE* and unstressed *yě* only differ in the direction to signal the associated AC, i.e., the focus of the sentence. An alternative proposition which should be verified in the antecedent, can be retrieved by making a "substitution" of the AC, either the preceding AC (the "CT") or the posterior AC (the focus). Therefore, I cannot find sufficient reasons to have two interpretations for the stressed *YE* and the unstressed *ye*. If we look at the AC/ID pattern of stressed *YE* and unstressed *ye* as repeated in (83), it is easy to get the impression that the contrastive topic behaves exactly like a focus constituent in the sense that it can be accented and it is the only constituent that *yě* can associate with.

(83) **AC/ID patterns of stressed *YE* and unstressed *yě***

([AC]_{CT}) (AC) (ID) *YE* ID (ID)
 (ID) *yě* [AC]_F (ID) (AC)

The unified treatment of the stressed and the unstressed additive particle is indeed supported by many. Saebo (2004: 210, cf. Rooth 1992) argues that there is no need to distinguish between the notion of focus and topic, considering that they essentially evoke the same contrastive implicature. Umbach (2012) also provides a uniform account for stressed and unstressed *auch*, i.e., both are treated as focus particles. Stressed *AUCH* associates with split focus, i.e., "a topicalized part carrying the accent and a deaccented part adjacent to the particle" (Umbach 2012: 16). One of her German examples is taken here to illustrate the split focus hypothesis, see (84).

- (84) a. [*OTTO*_i]_{CT} *hat AUCH* [_{t_i} *einen Schnaps getrunken*]_F
 Otto has also one schnaps drunk
 ‘Otto drank a schnaps too.’

b. Alt (*[OTTO hat einen Schnaps getrunken]*) = {*Otto hat einen
 Schnaps getrunken,
 Bruno hat einen
 Schnaps
 getrunken, ...*}

(Umbach 2012: 16)

As is illustrated in (84b), the contrastive topic *OTTO* in (84a) is seen as part of the focus associated with *auch* and serves to individuate the descriptively identical focus alternatives. She further claims that the accent on the particle *AUCH* as being an “emergency landing place for the obligatory sentence accent” has no semantic implication and thus does not indicate a verum focus either (Umbach 2012: 13). Like the role of accent on other postposed foci, the accent on the contrastive topic only marks the position where the alternatives vary.

I agree with Umbach’s unified treatment of stressed and unstressed additive particles, i.e., they are both a focus particle. Umbach’s treatment can also apply to the analysis of Mandarin additive *yě/YE*, as illustrated in (48) - (50).

- (85) [*LI SI*]_{CT} *YE* [_{t_i} *mǎi-le yì-běn shū*]_F.
 Li Si also buy-PERF one-CL book
 ‘Li Si bought a book too.’

Alt (*[Lǐ Sī mǎi-le yì-běn shū]*) = Alt {*Lǐ Sī mǎi-le yì-běn shū,
 Zhāng Sān mǎi-le yì-běn shū, ...*}

- (86) [*FAGUO diànyǐng*]_{CT} *tā YE xǐhuān* [_{t_i}]_F.
 France film he also like
 ‘He likes French films too.’

Alt (*[Fǎguó diànyǐng tā xǐhuān]*) = Alt {*Fǎguó diànyǐng tā xǐhuān,
 Měiguó diànyǐng tā xǐhuān, ...*}

- (87) *Tā yě xǐhuān* [*FAGUO diànyǐng*]_F.
 he also like French film
 ‘He also likes French films’

Alt (*[Tā xǐhuān Fǎguó diànyǐng]*) = Alt {*Tā xǐhuān Fǎguó diànyǐng,
 Tā xǐhuān Měiguó diànyǐng, ...*}

As is shown above, the function of stressed *YE* (as in (85) and (86)) is exactly the same as that of unstressed *yě* (as in (87)) in the sense of triggering alternatives and expressing the similarity between the host sentence and its alternatives. The accent on the associated constituents marks the range within which the alternatives differ.

2.5.6 The preceding stressed AC and unstressed *yě*

Previously we examined the regularity between additive *yě* and its AC and ID, and claimed that Mandarin *yě* displays exactly the same pattern as German *auch*, i.e., the last element in the *yě* /AC pair must bear the nuclear accent of the clause. However, there seem to be some counterexamples. According to Liu (2009), there are also cases in which the unstressed *yě* associated with a preceding constituent carries the central accent. One of her sentences is copied here as (88):

- (88) *Zhāng Sān zài-jīā bù xuéxí, zài-XUEXIAO yě bù xuéxí.*
 Zhang San at-home not study at-school YE not study
 ‘Zhang San does not study at home and he does not study in school either.’
 (Liu 2009: 43)

In (88), the constituent preceding unstressed *yě*, *zài xuéxiào* ‘at school’, bears the central accent. Liu (2009) claims that the unstressed *yě* in sentences like (88) is a focus particle which is associated with a contrastive topic. However, I find it hard to treat the constituent preceding *yě* as a pure contrastive element here. If *zài xuéxiào* ‘at school’ is seen as a contrastive topic, the more natural way of reading (88) is to attach the primary stress to *yě* (or both *zài xuéxiào* and *yě*), as we have seen in the examples we discussed in the previous section. When *zài xuéxiào* bears the main stress, it does not only mark that “He does not study at school” is one alternative that “Zhang San does not study at place x”, it also indicates that the proposition that it expresses is the least expected one among all the alternatives. In other words, this alternative expressed by the sentence with *yě* is anchored at an endpoint of certain scale. Therefore, I propose that unstressed *yě* with a preceding stressed AC is always scalar. In Chapter 4, I will present a detailed analysis separating scalar *yě* from additive *yě* syntactically and semantically (see also Yang 2019: 155-178). But I can already provide a few pieces of evidence here to sustain my claim.

Firstly, all the cases with a stressed AC preceding an unstressed *yě* can be paraphrased using a *lián* ‘even’...*yě* sentence, as is shown in (89).

- (89) *Zhāng Sān zài-jīā bù xuéxí,*
 Zhang San at-home not study
lián zài-XUEXIAO yě bù xuéxí.
 even at-school YE not study
 ‘Zhang San does not study at home and he does not study even in school.’

The interpretation of an *even* sentence typically involves a highest point in a contextually determined scale of unlikelihood, surprise, etc. (Jacobs 1983; König 1991; Hole 2004, 2017). That is to say, the *even* focus introduces the most unlikely or surprising candidate in the set of all possible alternatives.

Secondly, a sentence with an unstressed *yě* preceded by a stressed AC does not need an explicit or accessible alternative in the context, that is to say, a verifiable antecedent is not a necessary condition to license *yě* in this situation. For instance, if there is no antecedent at all, the host sentence of *yě* in sentence (88) can still be uttered without any problem, as is shown in (90).

- (90) *Zài-XUEXIAO tā yě bù xuéxí.*
 At-school he YE not study
 ‘He does not study even at school.’

This can also apply to the following case with *yě*, yet without a verifiable alternative in the background.

- (91) *Nǐ zhīdào ma? Zuótiān-de huódòng*
 You know SFP Yesterday-ATTR activity
GUOWANG yě lái-le.
 king YE come-PERF.
 ‘Do you know? Even the king attended the activity yesterday.’

It is consistent with Tovenà (2006), who claims that the Italian adverb *neanche* has two readings i.e., additive and scalar. The additive *neanche* must verify the presupposition in the antecedent, however, the presupposition of scalar *neanche* can be satisfied by accommodation. Consider her sentence (92), from Italian.

- (92) a. *Non sono passate Marzia, June, April, e non è passata neanche May.*
 ‘March, June, and April didn’t pass, neither did May.’
 b. *Non è passata neanche June.*
 ‘Not even June passed.’
 (Tovenà 2006: 376)

In a situation that all the four students, namely Marzia, April, May and June, did not pass the exam, both (a) and (b) has expressed this information. However, in (92a), all the alternatives are overtly listed and can be arranged in a free order. In contrast, the alternatives activated in (92b) are not freely ordered and the student June mentioned in (92b) is believed to be the cleverest one among the four. The unstressed *yě* with a preceding stressed AC behaves in exactly the same way as the scalar *neanche* in (92b) to realize its presupposition and alternatives, i.e., by accommodation. Again, it shows that *yě* in this situation, i.e., a stressed constituent is followed by an unstressed *yě*, is different from the additive one and should be seen as a scalar particle. We leave the detailed discussion of scalar *yě* to Chapter 4.

2.6 A note on adjacency in Mandarin

Earlier on I assumed that the adjacency between *yě* and the AC might not be applicable in Mandarin due to the limits on the syntactic distribution of Mandarin *yě*. Two sentences are repeated here as (93) and (94) to demonstrate this:

- (93) a. *Zhāng Sān mǎi-le yì-zhāng huà,*
 Zhang San buy-PERF one-CL picture,
yě mǎi-le [yì-běn shū]_F
 YE buy-PERF one-CL book.
 ‘Shang San bought a picture, and he also bought a book.’

- b. **Zhāng Sān mǎi-le yì-zhāng huà,*
 Zhang San buy-PERF one-CL picture,
mǎi-le yě [yì-běn shū]_F.
 buy-PERF YE one-CL book.

- (94) *Zhāng Sān xǐhuān kàn Měiguó diànyǐng,*
 Zhang San like watch the U.S. film
[Fǎguó diànyǐng]_{CT} tā YE xǐhuān.
 France film he YE like
 ‘Zhang San likes to watch American films, and he likes French films as well.’

Yě, unstressed in (93) and stressed in (94), is not adjacent to its AC in either sentence. One can still ask whether the distance between Mandarin additive *yě* and its AC has any consequence at all. It has been observed that not just any type of the constituent can come between *yě* and its AC. A sentence from Lu (1999) which is given as unacceptable by him is cited here as (95):

- (95)? *Wáng lǎoshī zài-zīliàoshì-li chá zīliào,*
 Wang teacher at-reading room-inside search material
Lǐ lǎoshī zài-zīliàoshì-li yě chá zīliào.
 Li teacher at-reading room-inside YE search material
 ‘Teacher Wang checks materials at the reading room, so does Teacher Li.’
 (Lu 1999: 121)

In Lu’s article, the prosodic feature of *yě* is not considered. However, considering the factor of accent or stress, the grammaticality test can be more precise. If *yě* is not stressed, the sentence sounds very odd. However, if *yě* is stressed and the adverbial *zài-zīliàoshì-li* ‘at the reading room’ in between the contrasted subject and *yě* is deaccented, the sentence sounds much better. I assume that by deaccenting the adverbial in between, the adjacency between the subject and *yě* is to some degree restored. That is to say, even for *yě* there is an adjacency requirement, except that there are certain distributional restrictions which keeps *yě* from being adjacent in the most literal sense. For instance, apparently, it can never be inside the VP, so it can never get adjacent to the object. However, as (95) shows, that when the AC precedes *yě*, the (prosodic) distance must not be too long either.

A parallel phenomenon is observed by Liu (2009) concerning unstressed *yě*. Liu (2009) notes that if a locative adverbial is inserted in between unstressed *yě* and its AC following it, the sentence becomes degraded, as is shown in (96) and (97).

- (96) *Zhāng Sān yě mǎi-le [yì-běn shū]_F*
 Zhang San YE buy-PERF one-CL book
 ‘Zhang San also bought a book.’
- (97) ??*Zhāng Sān yě zài-xuéxiào mǎi-le [yì-běn SHU]_F*
 Zhang San YE at-school buy-PERF one-CL book
 Intended: ‘Zhang San also bought a book at school.’
 (Liu 2009: 30-31)

When the locative adverbial is inserted in between unstressed *yě* and the AC, the sentence is degraded. The AC is simply too distant from the focus particle. In contrast, if the AC is the locative adverbial, the sentence is fine again. Consider (98).

- (98) *Zhāng Sān yě [zài-XUEXIAO]_F mǎi-le yì-běn shū*
 Zhang San YE at-school buy-PERF one-CL book
 ‘Zhang San also bought a book at school.’

Therefore, unstressed *yě* also tends to be closer to its AC. Sentences (96) – (98) demonstrate that the adjacency between the additive particle and its AC found in German and Dutch in a way also works in Mandarin. However, not all adverbials can block the association between *yě* and its associated constituent. Consider (99).

- (99) *Zhāng Sān chī-le dùn fàn,*
 Zhang San eat-PERF CL meal
 {*yě*} *hěn-kuài-de* {**yě*} [*mǎi-le bēn shū*]_F.
 YE quickly YE buy-PERF CL book
 ‘Zhang San had a meal and also bought a book quickly.’

If we follow the adjacency principle, *yě* should be put after the manner adverb *hěn-kuài-de* ‘quickly’. In fact, *yě* can only occur in a higher position than that. It can be related to the fact that manner adverbs and locatives occupy different positions: manner adverbs are much lower, they may be adjoined to vP or, even lower (e.g., VP) (Jackendoff 1972; Cinque 1999; Ernst 2004, etc.). In Chapter 3, the syntactic position of *yě* and its relative position with other adverbs/adverbials will be explored in detail.

2.7 Conclusion

This chapter presented in detail the treatment of Mandarin additive *yě* as an anaphoric element. Three properties of the additive particle were discussed to support this anaphoric treatment, viz., (i) due to its lack of descriptive content, it has no effect on the truth conditions of the host sentence and it resists presuppositional accommodation; (ii) its interpretation always depends on a verifiable antecedent which can satisfy its presupposition; and (iii) the two clauses coordinated by additive *yě* are asymmetric in order.

To the background of this proposal, I probed into what the possible antecedents of additive *yě* could be. By showing that the so-called “one-distinction” requirement cannot cover all situations where *yě* can be used, I argued that lexical or constituent similarity is not a necessary condition to license additive *yě*. As an anaphoric element, *yě* is satisfied when there is something in the context or discourse that it can refer to. Therefore, a verifiable antecedent (including an active context) with the same argumentative orientation towards the host sentence, is a necessary condition to license the use of *yě*. This approach is not only compatible with the

anaphoric treatment, it can also provide an account for some special cases in Mandarin, such as the *yě...yě...* construction and the cases where the “one-distinction” requirement is violated. I also presented examples to illustrate how the host sentence of *yě* can help to disambiguate the interpretation of the antecedent.

Finally, I looked closely at the properties of the host sentence. The two orders between the AC and the additive particle and their prosodic consequence were discussed. We found that, in parallel with their German counterparts, Mandarin stressed and unstressed *yě*s display a “mirror image”, i.e., they are in complementary distribution concerning the positions of AC and ID. I discussed in detail the relations between *yě* and its AC, preceding or following. In particular, I argued that the “contrastive topic” treatment of the preceding AC before the stressed particle can be maintained in Mandarin and that the unstressed *yě* with a preceding stressed AC should be seen as a scalar particle. Regardless of the two variants, I argued that the stressed and unstressed additive *yě*s have the same interpretation and function, which is in line with Umbach (2012). This view differs from the position of Reis and Rosengren (1997) who argue for two different “utterance meanings” and Féry (2012) who claims two different information structure roles, i.e., association-with-focus and free focus/verum focus. In this chapter I finally touched upon the fact that Mandarin *yě* is distributionally more restricted than German *auch*. To get a clearer picture on this issue, a detailed survey of the syntactic distribution of *yě* will be presented in Chapter 3.

Chapter 3 The syntactic position of *yě*

In Chapter 1 (section 1.2, to be precise), we saw examples that demonstrate the distributional restriction of Mandarin *yě* and its position relative to some modals. In Chapter 2, we examined examples (in 2.5.6) of unstressed *yě* with a preceding stressed AC that display different characteristics from the normal additive use and suggest the existence of a different *yě* both semantically and syntactically. In this chapter, I will present evidence to argue that we may need to postulate two different positions for *yě*, namely one for additive *yě* and one for the *yě* in *no matter* and *even* contexts. I will first argue that Mandarin additive *yě* is within the IP zone in the structure. In addition, I will present a more accurate position of additive *yě* with a survey on relative ordering between additive *yě* and adverbs and modals. This survey is based on both the syntactic hierarchy of modals proposed by Butler (2003) and the hierarchy of adverbs proposed by Cinque (1999). Finally, the position of *yě* in *no-matter* and *even* contexts will also be explored. I will show that there are indeed two different positions for *yě* in different contexts.

3.1 *Yě* as an IP adverb

It is generally assumed that there is some kind of hierarchy among adverbs. The relative ordering among a few types of adverbs is claimed to be universal in all languages. For instance, Jackendoff (1972) proposes that speaker-oriented adverbs are syntactically higher than subject-oriented adverbs and subject-oriented adverbs are higher than manner adverbs. This hierarchy has been proved to exist in many languages (cf. Cinque 1999; Ernst 2004). Though there are various ways to classify adverbs, it is generally agreed that different types of adverbs are located in different layers within the syntactic structure. Ernst (2004a: 10) provides us with a rough comparison table between different adverb classification schemes, as in (1):

(1)

a.	[SPEECH-ACT	[PROPOSITION	[EVENT	[EVENT-INTERNAL V]]]]
	CP	IP	VP?	VP
b. Jackendoff 1972	---speaker-oriented---			subject-oriented manner
c. Quirk et al. 1972	Conjunct-----		disjunct-----	process adjunct
d. McConnell-Ginet 1982	-----Ad-S-----		Ad-VP-----	Ad-V
e. Frey and Pittner 1999	frame	proposition	event	process
f. Various works	framing	clausal	negative time	-----aspectual-----

As the above table indicates, the same kind of adverbs may be labelled differently in different classifications, but it is widely recognized that different adverbs can be grouped into different zones or layers in the clausal structure,

such as the CP, IP and VP layers.²⁸ More specifically, we can see that manner and measure adverbs occur in the lowest position of the hierarchy and their position roughly corresponds to the VP. Subject-oriented adverbs occur in the middle zone, roughly “around Infl and the auxiliaries” (Ernst 2004:10), i.e., in the IP zone. Speaker-oriented adverbs are very high in the structure and should be seen as CP adverbs. In light of the positions in the syntactic structure, the relative linear ordering of the three types of adverbs in the sentence is predictable, as in (2) with a “<” meaning “linearly precedes”.²⁹

- (2) speaker-oriented adverbs (CP) < subject-oriented adverbs (IP) < manner adverbs (VP)
(cf. Jackendoff 1972: 89; Cinque 1999: 11)

This can be illustrated using the following English sentences:

- (3) a. Luckily, Gretchen had cleverly been reading up on local customs.
b. *Cleverly, Gretchen had luckily been reading up on local customs.
(Ernst 2007: 1009)
- (4) a. Sharon cleverly was (only) loosely holding on to the ropes.
b. *Sharon was (only) loosely cleverly holding on to the ropes.
(Ernst 2004: 325)

As is illustrated in (3) and (4), the speaker-oriented adverb *luckily* precedes the subject-oriented adverb *cleverly*; and *cleverly* must occur before the manner adverb *loosely*. The order in (2) can be illustrated using Mandarin data too, as in (5):

- (5) *Xiǎnrán tā míngzhì-de xùnsù líkāi-le.*
obviously he wisely quickly leave-PERF
'Obviously, he wisely has left quickly.'

As shown in (5), the evidential adverb *xiǎnrán* ‘obviously’, a speaker-oriented adverb (according to Ernst 2004a: 96), occurs before the subject-oriented adverbs *míngzhì-de* ‘wisely’ and *míngzhì-de* precedes the manner adverb *xùnsù* ‘fast’. The above sentence shows that the hierarchy in (2) holds up in Mandarin.

²⁸ The label “VP” stands for VP or vP/VP. vP and VP are only distinguished when necessary.

²⁹ As is, or will be, clear, in this chapter, precedence relations will be assumed to be directly translatable into hierarchical relations: what precedes is higher. Linear and hierarchical terms will be used interchangeably.

As noted above, adverbs are assumed to be located in different zones in the syntactic structure and some orders between different types of adverbs seem to be universal. Cinque (1999: 106) further elaborates on the “universal hierarchy”, claiming that “the hierarchies of adverbial specifiers and clausal functional heads match in a systematic one-to-one fashion” and that there is a universal hierarchy of the functional morphemes and the adverb classes, as demonstrated in (6):

- (6) [*frankly* Mood_{speech act}] [*fortunately* Mood_{evaluative}] [*allegedly* Mood_{evidential}] [*probably* Mod_{epistemic}] [*once* T(Past)] [*then* T(Future)] [*perhaps* Mood_{irrealis}] [*necessarily* Mod_{necessity}] [*possibly* Mod_{possibility}] [*usually* Asp_{habitual}] [*again* Asp_{repetitive(I)}] [*often* Asp_{frequentative(I)}] [*intentionally* Mod_{volitional}] [*quickly* Asp_{celerative(I)}] [*already* T(Anterior)] [*no longer* Asp_{terminative}] [*still* Asp_{continuative}] [*always* Asp_{perfect(?)}] [*just* Asp_{retrospective}] [*soon* Asp_{proximative}] [*briefly* Asp_{durative}] [*characteristically(?)* Asp_{generic/progressive}] [*almost* Asp_{prospective}] [*completely* Asp_{sg.completive(I)}] [*tutto* Asp_{pl.completive}] [*well* Voice] [*fast/early* Asp_{celerative(II)}] [*again* Asp_{repetitive (II)}] [*often* Asp_{frequentative(II)}] [*completely* Asp_{sg.completive(I)}]
(Cinque 1999: 106)

Now let's turn to Mandarin *yě*. In Chapter 2, it is shown that the syntactic distribution of Mandarin *yě* seems to be less flexible than its counterparts in some European languages. For instance, Mandarin *yě*, unlike its counterparts in German and Dutch, cannot appear sentence-initially, or, phrased differently, *yě* can never precede the constituent serving as the subject (or topic) of the sentence even if the constituent is the AC. The relevant example is repeated here as (7).

- (7) **Yě Bǐdé dú-le zhè-běn shū.*
YE Peter read-PREF this-CL book
INTENDED: ‘Peter, too, has read the book.’

In addition, *yě* must always appear in a position before the verb, all post-verbal positions are excluded (again, this is different from German and Dutch), as is shown in (8).

- (8) *Xiǎo Zhāng qù-le Běijīng,*
Xiao Zhang go-PERF Beijing
{*yě*} *qù* {**yě*} *le* {**yě*} *Nánjīng* {**yě*}.
YE go YE PERF YE Nanjing YE
‘Xiao Zhang went to Beijing and he also went to Nanjing.’

As remarked by N. Huang (2018: 353), from the linear position of Mandarin *yě* in a sentence, we may deduce that Mandarin *yě* may be syntactically “in the inflectional domain” which contains “a ModalP or TP”. From our data so far, we cannot see the relation between *yě* and modals, but it is safe to say that it is in any case in a position higher than the VP and lower than the subject. However, this description does not unequivocally validate the assumption that additive *yě* is an IP adverb. For instance, one may wonder where the subject is located in the structure. Below, I will present one piece of evidence to support the “in the IP” assumption of additive *yě*.

3.1.1 Relative position of additive *yě* to subjects

Let’s first answer the question where the subject is in the clausal structure. In line with Diesing (1992), Tsai (2001, 2015) argues that there are two subject positions for indefinite NPs: the higher one, the “outer subject” in his terms, occupies [Spec, IP] and the lower one, or the “inner subject”, occupies [Spec, vP]. In view of Diesing’s (1992) Mapping Hypothesis and Tsai’s (2001) Extended Mapping Hypothesis (for details, see the original papers), the lower indefinite subject, which is within the nuclear scope (that is, within vP), can be licensed by the existential closure and thus get a nonspecific, existential reading. In contrast, the higher indefinite subject, that is in the specifier of IP, is beyond the nuclear scope and not subject to licensing by the existential closure associated with it. Therefore, the higher subject requires licensing from another operator, e.g., a determiner or a sentential operator such as a quantificational adverb, and is generally interpreted with a specific reading.

I will not go into the details of Tsai’s (2015) analysis, but the two subjects are presented in the following two sentences. As is shown in (9) and (10), the indefinite NP *yǒu liǎng-ge rén* ‘two persons’ is introduced by the existential marker *yǒu* ‘exist/have’ and may result in two different readings concerning the specificity.³⁰ When it occurs after the deontic modal *yídìng* ‘must/have to’, as in (9b), and *yīnggāi* ‘ought to’, as in (10b), the NP has a non-specific reading and is analyzed as the inner subject. In contrast, when

³⁰ It has been observed that indefinites without *yǒu* ‘exist/have’ cannot serve as the subject of a sentence, as is illustrated by the following sentence (Tsai 2001: 145):

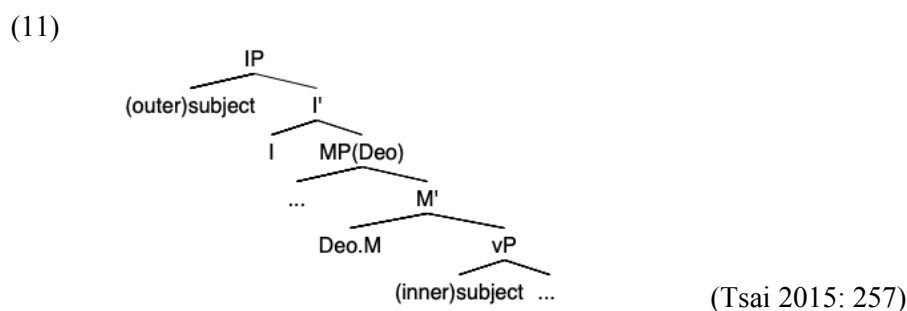
*(*Yǒu*) *liǎng-ge rén* *yīqián* *jiàn-guo* *Akiu*.
Exist two-CL person before meet-EXP Akiu
‘Two people met Akiu before.’

With the aid of *yǒu* ‘exist/have’, the numeral NP serving as the outer subject often derives a specific reading.

yǒu liǎng-ge rén ‘two persons’ precedes these elements, as is the case in (9a) and (10a), they have a specific reading.

- (9) a. *Zhècì yǒu liǎng-ge rén yídìng^{deontic} yào lái.*³¹
 this.time exist two-CL person must need come
 ‘The two (specific) people must come this time.’
- b. *Zhè cìyídìng^{deontic} yào yǒu liǎng-ge rén lái.*
 this.time must need exist two-CL person come
 ‘Two (nonspecific) people must come this time.’
- (10) a. *Zhècì yǒu liǎng-ge rén yīnggāi^{deontic} lái.*
 this.time exist two-CL person ought.to come
 ‘The two (specific) people ought to come this time.’
- b. *Zhècì yīnggāi^{deontic} yǒu liǎng-ge rén lái.*
 this.time ought.to exist two-CL person come
 ‘Two (nonspecific) people ought to come this time.’

As is illustrated in (9) and (10), the position of the deontic modals in the clause affects the interpretation of the subject qua specificity. According to Tsai (2015), different interpretations of the numeral NP subject headed by *yǒu* ‘exist/have’ in the above sentences should be attributed to the syntactic position of the deontic modals, i.e., deontic modals are in a position higher than the inner subject but lower than the outer subject, as illustrated by the following tree:



³¹ Note that, according to Tsai (2015:236), *yídìng* and *yīnggāi* have two different readings, i.e., the first one is an epistemic reading to express the inevitability or certainty; the second one denotes a deontic or obligation reading. Although (9b) and (10b) could also have an epistemic reading, I only adopt the deontic reading here for discussion purpose.

Therefore, when an indefinite numeral NP occurs in a position lower than the deontic modal as in (9a) and (10a), it is the inner subject and has an unspecific reading. In contrast, when the same numeral NP occurs in a position higher than the deontic modal as in (9b) and (10b), it serves as the outer subject and has a specific reading. As we saw above, which reading the indefinite nominal phrase gets, depends on where it is licensed (by which operator its variable is bound); what is important for us is its position associated with the interpretation (rather than the interpretation itself), with the position relative to the modal as our diagnostic.

Note, by the way, that without context, if the modal *yīnggāi* ‘ought to’ precedes the inner subject with an unspecific reading, it can have two readings, i.e., one is the deontic/root reading, i.e., a non-clausal reading, as illustrated in (10b), the other is the epistemic reading ‘it should be the case that...’, i.e., a clausal reading, which is in the CP according to Tsai. However, when *yīnggāi* ‘ought to’ occurs lower than the outer subject as in (10a), it can only have a root/deontic reading.³² This shows that deontic modals are lower than the outer subject. However, the epistemic modals might be higher than the outer subject and the root modals.³³ We will have more discussion about the hierarchy of modals in the following sections.

Returning now to *yě*, consider (12):

³² For some reason, different from *yīnggāi* ‘ought to’ which may have two readings, *yīnggāi* in the phrase *yīnggāi-huì* can only have an epistemic reading, and it can occur after the indefinite numeral phrase with a specific reading, as shown by the sentence below (Tsai 2015: 239):

Zhècì yǒu liǎng-ge rén yīnggāi-huì lái.
 this.time exist two-CL person ought.to come
 ‘Two (specific) people ought to come this time.’

³³ Meanwhile, as noted by Tsai (2015: 239), not all root modals can occur before the numeral subject headed by *yǒu* ‘exist/have’. The dynamic modals *gǎn/kěn* can only occur after the numeral NP:

Zhècì (*gǎn/kěn) yǒu liǎng-ge rén
 this.time dare.to/be.willing.to exist two-CL person
 gǎn/kěn lái.
 dare.to/be.willing.to come
 ‘Two (nonspecific) people dare to/are willing to come this time.’

Tsai argues that *gǎn/kěn* ‘dare to/ be willing to’, different from other root modals whose position is higher than *vP*, are lower than the *vP* and adjacent to the *VP*. Whether this is correct or not, does not affect our discussion of the positioning of *yě*.

(12) **specific outer subject < yě:**

- a. Zhècì yǒu liǎng-ge rén yě lái.
 this.time exist two-CL person YE come
 ‘Two (specific) people will also come this time.’

yě < nonspecific inner subject:

- b. Zhècì yě yǒu liǎng-ge rén lái.
 this.time YE exist two-CL person come
 ‘Two (nonspecific) people will also come this time.’

As shown in (12), *yě* has exactly the same effect, so to speak, as the deontic modals in (9) and (10) as to what interpretation the subject has. Note that no other interpretations are possible. Thus, a logical conclusion would be that additive *yě*, like the modals in (9) and (10), is higher than the inner subject and lower than the outer subject. Considering the position of inner and outer subject in the structure, tentatively, we get the following generalization about the position of additive *yě*.

- (13) Mandarin additive *yě* is an IP adverb. It occurs in a position lower than the outer subject, i.e., [Spec, IP], but higher than the inner subject, i.e., [Spec, vP].

3.1.2 Two more pieces of evidence

If we are on the right track, then, considering the order of adverbs in (2), we make the following prediction regarding the relative order between additive *yě* and CP adverbs and VP adverbs:

- (14) speaker-oriented adverbs (CP) < *yě* (IP) < manner adverbs (VP)

To test this prediction, let’s first examine the sentences in which *yě* co-occurs with a speaker-oriented adverb. Consider (15) and (16):

- (15) {*Lǎosi-shuō*}, tā {**lǎoshi-shuō*} yě {**lǎoshi-shuō*}
 frankly, he frankly YE frankly
gàosù-le wǒ zhēnxiàng.
 tell-PEFR I truth
 ‘Frankly, he also told me the truth’

- (16) *Zhāng Sān zǒu-le, {hǎoxiàng} Lǐ Sì*
 Zhang San leave-PERF seemingly Li Si
 {hǎoxiàng} yě {*hǎoxiàng} zǒu-le.
 seemingly YE seemingly leave-PERF
 ‘Zhang San left, and it seems that Li Si left too.’

A speech-act adverb *lǎoshi-shuō* ‘frankly’ in (15) and an epistemic adverb *hǎoxiàng* ‘apparently/seemingly’ in (16), both of which are speaker-oriented adverbs, precede additive *yě*.³⁴ Although the two speaker-oriented adverbs can both occur sentence-initially, the epistemic adverb *hǎoxiàng* can also appear in the position after the subject. In contrast, the speech-act adverb *lǎoshi-shuō* always precedes the rest of the sentence.

As predicted, the VP adverbs, for instance manner adverbs, can only occur after the additive *yě*, as is illustrated in (17).

- (17) *Tā {*dàshēng} yě {dàshēng} hǎn-zhe.*
 he loudly also loudly shout-PROG
 ‘He also shouted loudly’

Similarly, another focus adverb, *zhǐ* ‘only’, which presumably adjoins to *vP* or *VP* (Lin 2012), is also found in the scope of additive *yě*. See (18):

- (18) *Zhāng Sān {*zhǐ} yě {zhǐ} jiè shū.*
 Zhang San only YE only borrow book
 ‘Zhang San only borrow books too.’

The linear order between *yě* and other CP and VP adverbs in (15)-(18) verifies our prediction in (14) and supports the generalization formulated in (13).

Another piece of supporting evidence comes from the fact that *yě* can be used to disambiguate the possible clausal and manner reading of certain adverbs. It has been observed that one adverb can have more than one reading,

³⁴ Note that most speech-act adverbs/adverbials in Mandarin contain a verbal element meaning ‘say’, i.e., *shuō* or *jiǎng*, after the adverbial part denoting the specific attitude of the speaker towards the following assertion. The verbal element *shuō* or *jiǎng* seems to indicate directly that these are speech-act adverbs. In the form including the verbal element, they can only get a clausal reading and they can only occur sentence-initially. This differs from English, in which speech-act adverbs, for instance, *frankly*, can also get a manner reading and occur inside the clause (Ernst 2004).

for instance, either a clausal or a manner reading. Ernst (2004, 42) gives an example to illustrate this phenomenon, see (19):

- (19) a. Alice has cleverly answered the questions.
 b. Alice cleverly has answered the questions.
 c. Alice has answered the questions cleverly.
 Ernst (2004: 42)

As is demonstrated, the interpretation of *cleverly* in (19a) is ambiguous because it may have two readings which are explicitly spelled out in (19b) and (19c). One is a clausal reading, as is used in (19b), where Alice is regarded to be clever because she has answered the questions; the other is a VP/manner reading, as illustrated in (19c), which should be interpreted as that she has answered the questions in a clever manner. Accordingly, *cleverly* should be treated as a clausal adverb in (19b) and a manner adverb in (19c). Therefore, *cleverly* in (19b) is interpreted higher, say, in the CP, than it is in (19c), which is in or directly adjoined to the VP.

The higher/lower interpretation ambiguity of certain adverbs can also be found in Mandarin. For instance, if we translate (19a) into Mandarin, we get (20):

- (20) *Ailisi cōngming-de huida-le zhe-ge wenti.*
 Ailisi cleverly answer-PERF this-CL question
 ‘Alice has cleverly answered the questions.’

Just like its English counterpart, the Mandarin equivalent sentence in (20) is ambiguous, with the adverb having either the clausal reading or the manner reading.

Now, additive *ye* can occur either before the adverb *cōngming-de* ‘cleverly’ or after it. But different positions of *ye* in the sentence have semantic consequences: the interpretations of *cōngming-de* ‘cleverly’ in the two sentences are different. This can be seen in (21) and (22).

- (21) *Ailisi ye cōngming-de huida-le zhe-ge wenti.*
 Ailisi YE cleverly answer-PERF this-CL question
 ‘Alice has also cleverly answered the questions.’

- (22) *Ailisi cōngming-de ye huida-le zhe-ge wenti.*
 Ailisi cleverly YE answer-PERF this-CL question
 ‘Cleverly, Alice also answer the question’

With *yě* placed before the adverb *cōngmíng-de* ‘cleverly’, the adverb in (21) yields a manner reading, which should be interpreted in the vP/VP. However, if *yě* is inserted after *cōngmíng-de* ‘cleverly’, *cōngmíng-de* ‘cleverly’ can only be interpreted as a clausal adverb in (20), that is to say, it will be interpreted in the CP zone. This observation is consistent with our generalization in (13), because, with *yě* in the IP, if an adverb is either in the CP (clausal) or the VP (manner) and it follows *yě*, then it must be in the VP (and in (21), *cōngmíng-de* ‘cleverly’ has the manner reading), and if it precedes *yě*, it must be in the CP (and, sure enough, in (22) *cōngmíng-de* can only be interpreted as a clausal adverb).

Based on the above observations, our generalization that additive *yě* is an IP adverb is tenable. However, the exact positioning of *yě* is still not clear considering that there might be more going on in the domain of IP, e.g., aspects and modals. For instance, it may also be plausible to be more precise and argue that additive *yě* is higher than (outer) AspP, since it occurs before the aspectual particles that we know are in the outer Aspect, such as *zài*, expressing the progressive (Tsai 2008). Outer AspP is, of course, part of the IP domain. See (23).³⁵

- (23) a. *Tā yě zài chàng gē.*
 he YE PROG sing song
 ‘He is also singing.’
- b. **Tā zài yě chàng gē.*
 He PROG YE sing song

Meanwhile, we find that *yě* must occur before dynamic modals too, as shown in (24).

- (24) a. *Tā yě gǎn lái.*
 he YE dare.to come
 ‘He dares to come too.’
- b. **Tā gǎn yě lái.*
 he dare YE come

(23) and (24) show us that additive *yě* may occur in a position higher than AspP and also higher than certain modals. Therefore, in order to figure out

³⁵ The position of perfective *le* is harder to pin down. There are good reasons to assume that it occupies a position within the vP, in an Inner Aspect position, even though it is interpreted in Outer Aspect (see Sybesma 2017 and Cheng 2019). I will not dwell on this here, as the positioning relative to *zài* is unambiguous.

what the more accurate position of additive *yě* in the IP domain is, it is necessary to investigate its relative position to other elements in this domain, such as other IP adverbs and modals. This is one of the main tasks in 3.2. But so far, we can wrap up this section with the following conclusions:

- 1) *Yě* is an IP adverb. It is located higher than the inner subject and lower than the outer subject.
- 2) As an IP adverb, *yě* occurs in a position lower than CP adverbs and higher than VP adverbs.
- 3) The disambiguation role of *yě* in the clausal and verbal readings of some adverbs follows from being an IP adverb.

3.2 The relative position of additive *yě* to modals

As we concluded in 3.1, Mandarin additive *yě* is an IP adverb. However, to determine the more accurate position of additive *yě* in the IP domain, it is useful to survey the relative order between the additive *yě* and other elements in the IP domain, such as the adverbs and modals. In this section, I will look into the hierarchy of modals and their order in relation to *yě*.

According to Tsai, exactly like the hierarchy found with adverbs, there is a hierarchy among modals, i.e., CP modals < IP modals < vP modals. If so, the relative order between additive *yě* and certain modals is predictable, in that the CP modals will occur higher than *yě* and vP modals will occur lower; we already saw an example of the latter in (24). However, the general classification of CP/IP/vP modals is not sufficient for us to look into the details in the IP domain. In other words, we need a more elaborate way to classify modals. Moreover, it has been pointed out that there are two pairs of factors that are often considered in the distinction of Modals, i.e., epistemic vs. root and necessity vs. possibility. Based on these four factors, Butler (2013) proposes a four-way split of modals, i.e., epistemic necessity, epistemic possibility, root necessity and root possibility modals. Among them, the first two are claimed to be in the domain of CP and the latter two are in the domain of IP. The four types of adverbs follow the following hierarchy:

- (25) Epistemic necessity < Epistemic possibility < Root necessity < Root possibility

In the following section, I will first introduce the classification of modals along the dimensions just mentioned. On this basis, I will revisit Lin's (2012) classification and hierarchy of Mandarin modal verbs and show that Butler's hierarchical structure can be applied to Mandarin in an elegant way. Finally,

I will determine more accurately the position of additive *yě* in the structure by surveying the interaction between *yě* and Mandarin modals.

3.2.1 Classification of modals: two dimensions

It is a well-known (possibly universal) fact that one modal verb can be interpreted in different ways. For instance, the English modal verb *must* has different interpretations in (26) and (27) (Butler 2003: 967):

(26) Arthur must be in bed.
= ‘it is a necessary assumption that Arthur is in bed.’

(27) Susan must tidy away the toys.
= ‘Susan is required to tidy away the toys.’

The difference between (26) and (27) is obvious: *must* in (26) denotes an attitude or judgment of the speaker towards the whole proposition ‘Arthur is in bed’, and in (27), it denotes an obligation that the subject ‘Susan’ should fulfill. Conventionally, modals which denote a clausal reading like *must* in (26) are called epistemic modals. Modals which relate the subject to the predicate (like *must* in (27)) are called root modals. The epistemic/root differences have been discussed at length by many scholars. For instance, Ross (1969) argues that epistemic modals are similar to raising verbs because they do not impose selectional restrictions on the subject, while root modals correspond to control verbs in the sense that they impose selectional restrictions on the subject.³⁶ Cook (1978: 6) proposes that epistemic modals are used to express the truth value of the whole sentence and root modals relate the subject to an activity and often denote permission, obligation and ability. Brennan (1997) claims that the two types of modals have a different scope, the epistemic ones are taken as propositional/sentential operators which take scope over the subject (the higher/outside subject as we discussed earlier, i.e., in [Spec, TP/IP]); the root ones are regarded as a predicate operator which scope under the subject and are “concatenated in the semantics with the VP, not with the sentence” (Brennan 1997: 192). Therefore, it is generally agreed that root modals are lower than epistemic modals in the syntactic structure. In particular, based on the distinction of two possible positions for the subject proposed by Diesing (1992) and as we discussed in the previous section, Butler (2003) specifically points out that epistemic modals should scope higher than the ‘weakly quantified subject’ or the outside subject ([Spec, IP]), and root modals are

³⁶ In line with Ross, some (Huang 1988, Lin and Tang 1995, Li 1990, etc.) also relate Mandarin epistemic modals and root modals to raising and control verbs.

interpreted lower than the higher subject, but higher than the lower subject ([Spec, vP])). The interpretational and scopal differences between epistemic modals and root modals laid out here are useful for us later to judge whether a Mandarin modal should be viewed as an epistemic or a root modal.

Now considering Mandarin data, Mandarin modals also have this epistemic/root distinction. Lin and Tang (1995:54) argue that Mandarin modals can also fit into this dichotomy, i.e., the epistemic modality and the deontic/root modality. According to them, *kěnéng* ‘possible’ can only express epistemic modality, *xiǎng* ‘want’ / *gǎn* ‘dare’ / *kěn* ‘be willing to’ / *néng* ‘be able to’ / *yuànyì* ‘be willing to’ can only denote deontic modality. I shall return to these modals to examine whether they only have “one reading” or not. However, according to them, there are also a few modals which can express both the epistemic reading and the deontic reading, for instance, *yīnggāi* ‘should’ / *kěyǐ* ‘may’ / *huì* ‘will’. Consider (28) and (29) from Lin and Tang (1995):

(28) *Tā kěnéng chī-guo fàn le.*
 he possible eat-EXP meal SFP
 ‘It is possible that he has eaten’

(29) *Tā néng lái.*
 he be.able.to come
 ‘He is able to come’
 (Lin and Tang 1995: 71)

From the English translation of the two sentences, it is clear that *kěnéng* ‘possible’ in (28) has a clausal epistemic reading, and *néng* ‘can/able’ in (29) has a root reading.

Indeed, as pointed out by many (e.g., Lin (2012) and Tsai (2015)), the fact that one modal can have multiple interpretations is even more obvious in Mandarin than in English. For instance, Tsai (2015) uses *néng* ‘can/able’ as an example to illustrate the fact that one modal can have different interpretations from a ‘willing’ or ‘ability’ reading to deontic/habitual and or an irrealis reading (this differs from Lin and Tang who claim that *néng* ‘can/able’ only has a deontic reading). Tsai refers to this phenomenon as the “modality spectrum”. Consider (30)-(33) from Tsai (2015: 236):

(30) *Xiǎo D néng chī là.*
 small D able eat spicy
 ‘Small D is able to (willingly) eat spicy food.’

- (31) *Xiǎo D xià-ge yuè jiù*
 Small D next month then
néng chū-yù le.
 able be.released.from.prison PERF
 ‘Small D is able to (allowed by law) be released from prison next month.’
- (32) *Xiǎo D jiǎo gāng hǎo,*
 small D foot just well
míngtiān néng shàng-shān.
 tomorrow able climb.mountain
 ‘Small D’s foot has just recovered, so he is able to (physically allowed) go mountain climbing.’
- (33) *Táifēng gāng zǒu,*
 Typhoon just leave
míngtiān néng shàng-shān le.
 tomorrow able climb.mountain SFP
 ‘The typhoon just left, so it is possible (for us) to go mountain climbing.’

As shown in (30) to (33), *néng* has different interpretations in accordance with the given contexts. *Néng* in the (30)-(32) can be seen as a root modal due to its non-clausal readings while in (33) it should be seen as an epistemic modal which denotes the possibility of the proposition of ‘we go climbing’.³⁷

Considering the phenomenon mentioned above we can say that, from another perspective, the epistemic modal and the root modal are often realized by the same modal word, or by “the same PF [phonetic form]” (Butler 2013: 968). It can be seen from English *must* in (26) and (27) and Mandarin *néng* in (30)-(33). It is also consistent with Lin and Tang (1995), who claim that *yīnggāi/kěyǐ/huì* have both epistemic and root readings. In fact, our following Mandarin data will show that nearly all Mandarin modals can have both epistemic and deontic readings. Butler assumes that the two types of modals which share the same PF have unitary lexical semantics while also occupying

³⁷ The modal in (33) could also be interpreted as a circumstantial, rather than epistemic. There is, however, no doubt that *néng* can be interpreted as high as an epistemic, as the following example, suggested to me by Huba Bartos (p.c.) shows:

(i) [Looking at the clear, cloudless sky]

Yī-liǎng-ge xiǎoshí nèi bù néng xià-yǔ.
 one-two-CL hour inside not can descend-rain
 ‘It can’t possibly rain in the next two hours or so.’

two different syntactic positions. Therefore, although the epistemic and root modals are associated with different syntactic positions, the modals sharing the same PF are semantically relevant. Recall the English examples in (26) and (27), the epistemic *must* and the root *must* both express the ‘necessity’ meaning. Similarly, the Mandarin modal *néng* in (30)-(33), neglecting contextual information, denotes some kind of ‘possibility’ in all these sentences, which stays invariable regardless of the context.

The above-mentioned semantic core of the modals introduces the other two factors about modality, i.e., necessity and possibility, which are also frequently used to distinguish different types of modals (Kratzer 1977, 1991; Butler 2003). The following quote is from Kratzer (1991: 646):

- (34) In using an epistemic modal, we are interested in what else may or must be the case in our world given all the evidence available. Using a circumstantial (i.e. root) modal, we are interested in the necessities implied by or the possibilities opened up by certain sorts of facts.

Mandarin data also supports this claim: both epistemic modals and root modals in Mandarin include the two sorts of modals expressing either some sort of necessity or some sort of possibility, as is shown in (35)-(38):

- (35) *(Yīng)gāi zánmen zhè-xie rén dé jiǎng.*
ought.to we these people receive award
‘It is a necessary assumption that our people get an award.’

- (36) *Kěnéng zánmen zhè-xie rén dé jiǎng.*
be.possible we these people receive award
‘It is a possible assumption that our people get an award.’

- (37) *Nǐ (yīng)gāi chàng yì-shou xiǎo-qǔ.*
you ought.to sing one-CL ditty
‘You are required to sing a ditty.’

- (38) *Nǐ néng chàng yì-shou xiǎo-qǔ.*
you be.able.to sing one-CL ditty
‘You are allowed to sing a ditty.’

(Adapted from Huang, Li and Li 2009: 108-110)

The epistemic *yīnggāi* in (35) denotes a necessity meaning and the epistemic *kěnéng* in (36) expresses a possibility meaning. Similarly, the root modal *yīnggāi* in (37) denotes some kind of necessity in view of duty reading and the root modal *néng* in (38) expresses a sort of possibility given the permissible

reading. So, besides the epistemic and root dichotomy, possibility and necessity should be seen as another dimension that we need to consider in order to have an appropriate classification of modals.

So far, I have introduced the two dimensions of classifying modals. Butler's modal hierarchy will be introduced next.

3.2.2 Butler's modal hierarchy

In line with Kratzer, Butler (2003) argues that modals should be split four-ways: epistemic necessity, root necessity, epistemic possibility and root possibility. He further proposes that there is a rigid hierarchy between the four types of modals. This is not a completely new proposal. Earlier on I showed that there are two syntactic positions for modals and that epistemic modals are in a higher position than root modals. It has been claimed by Cormack and Smith (2002) that the two syntactic positions (Modal₁ and Modal₂ in their terms) for modals are occupied by necessity and possibility modals instead of epistemic and root modals, i.e., the necessity modals are hierarchically higher than the possibility modals. Meanwhile, in line with Klima (1964), they also argue for two positions of negation, i.e., the sentential negation represented by Pol(arity) [NEG] and the VP or adverbial negation represented by Adv [NEG]. The hierarchy of all the modals and negations proposed by them is given in (39):

- (39) Modal₁ (necessity) < Pol [NEG] < Modal₂ (possibility) < Adv [NEG]
(Cormack and Smith 2002: 138)

Based on the interaction of the four types of modals and two types of negations as shown in (39), Butler (2003) includes all the elements in his sequence, as shown in (40):

- (40) Epistemic necessity < (negation) < epistemic possibility < (strong) subject < root necessity < negation < root possibility < vP³⁸
(Butler 2003: 986)

³⁸ The strong subject here is the higher subject or the outer subject that we mentioned earlier. As to the higher negation, Butler assumes that it corresponds the Foc(us) position of Rizzi (1997). His survey result shows that native speakers completely accept a clausal negation scoping over modals expressing epistemic possibility. As a contrast, very few people accept a clausal negation scoping over epistemic necessity (Butler 2003: 985). He also assumes that the negation scoping over root necessity is a clausal negation that scopes in Foc.

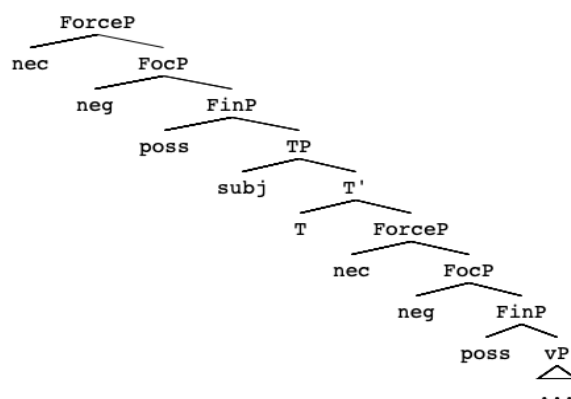
As shown in (40), Butler does not only include (39) proposed by Cormack and Smith, he also assumes two structural positions for the “necessity < negation < possibility” array, one in CP, i.e., above the outside subject, and the other above vP.

In so doing, Butler effectively maps the positions of modals onto Rizzi’s (1997) CP structure, proposing that this sequence occurs twice, not just in the CP but also right above vP. Here is Rizzi’s CP structure:

- (41) Force < (Top(ic)) < Foc(us) < (Top(ic)) < Fin(iteness)
(Rizzi 1997: 297)

On the basis of all this, Butler proposes the following structure, representing the hierarchical relations between all four types of modals and both types of negation (Butler 2003: 988):

- (42)



In the following paragraphs, I will examine whether Mandarin data can be analyzed insightfully using the structure presented in (42).

3.2.3 Classification of Mandarin Modals

Lin (2012) offers a comprehensive survey of the order of Mandarin modals. His classification of modals is slightly different from Butler’s. Following Palmer (1990), Lin (2012) proposes three types of modals for Mandarin. Besides the epistemic modals, he has two types of root modals, namely the deontic modals, which denote the obligation meaning, and what he calls the “dynamic modals”, which denote ability, permission and volition. Meanwhile, on the basis of their distributional properties, he separates the two modals *hui*

‘will’ and *yào* ‘be going to’ from the other modals and argues that they should be treated as two separate types. His classification is presented in (43) (Lin 2012: 154):

(43)

Epistemic		<i>kěnéng</i>	‘be likely to’
		<i>yīnggāi</i>	‘should’
Deontic	Obligation	<i>bìxū</i>	‘must’
		<i>yīnggāi</i>	‘should’
		<i>děi/dé</i>	‘has to’
Dynamic	Ability	<i>néng/nénggòu</i>	‘be able to’
		<i>huì</i>	‘be capable of’
	Permission	<i>kěyǐ</i>	‘be permitted to’
	Volition	<i>kěn</i>	‘be willing to’
<i>yuànyì</i>		‘be willing to’	
Future		<i>huì</i>	‘will’
Aspect		<i>yào</i>	‘be going to’
		<i>zài</i>	Progressive marker

If we consider the other two factors, i.e., necessity and possibility, roughly all the deontic modals in (43) which express the meaning of obligation fall under the cover of the root necessity modals in Butler’s classification, and the dynamic modals in (43), which denote ability, permission and volition correspond to Butler’s root possibility modals. Indeed, *huì* ‘will’ in Mandarin is often claimed to express (high) probability, i.e., it also expresses a possibility reading. Take Lin’s example to illustrate this meaning:

- (44) *Zhāng Sān míngtiān huì lái.*
 Zhang San tomorrow will come
 ‘Zhang San will come tomorrow.’
 = ‘Zhang San is very likely to come tomorrow.’
 (Lin 2012: 155)

So, it is reasonable to argue that *huì* in (44) is a root possibility modal. And when *yào* expresses the meaning of obligation, it is then a root necessity modal in Butler’s terms.³⁹ Consider (45):

³⁹ In line with Hsieh (2004) and Hsieh and Lin (2003), Lin (2012: 155-156) summarizes three different uses of *huì* and five uses of *yào*. I would like to argue that all the uses of *yào* except the conditional marker in *Yào ma nǐ lái, yào ma wǒ qù*. ‘Either you come, or I go.’ denote a ‘need’ reading. And as to *huì*, the ‘possibility’ reading exists invariably in all cases.

- (45) *Zhāng Sān yào lái, fǒuzé tā huì yǒu máfan.*
 Zhang San need come otherwise he will have trouble
 ‘Zhang San must come, otherwise he will be in trouble.’
 (Lin 2012: 155)

Combining Lin and Butler, I have revised the classification of Mandarin modals, as demonstrated in (46):

(46)

Epistemic necessity	<i>děi</i>	‘It has to be the case that...’
	<i>yào</i>	‘It is required to be the case that...’
	<i>bìxū</i>	‘It has to be the case that...’
	<i>yīnggāi</i>	‘It should be the case that...’
Epistemic possibility	<i>kěnéng</i>	‘It is likely to be the case that...’
	<i>kěyǐ/néng (bù néng)</i>	‘It is permitted to be the case that...’
	<i>huì (bú huì)</i>	‘It will be the case (or not) that...’
	<i>kěndìng</i>	‘It surely will be the case that...’
Root necessity	<i>děi</i>	‘must’
	<i>yào</i>	‘be obliged to’
	<i>bìxū</i>	‘have to’
	<i>yīnggāi</i>	‘need’
Root possibility	<i>huì/néng/nénggòu</i>	‘be able to’
	<i>kěyǐ/néng</i>	‘be permitted to’
	<i>kěn/yuànyì</i>	‘be willing to’

In (46), I have a larger group of epistemic modals than presented in previous classifications. It is not something new to claim (see, for instance, Lin and Tang (1995)) that *kěnéng*, *huì*, *kěndìng*, *yīnggāi* can denote an epistemic/clausal reading.⁴⁰ However, in the literature it is generally ignored that Mandarin *bìxū*, *yào*, *děi* can also have an epistemic/clausal interpretation. For instance, when Lin (2002) discusses the order between possibility modals and deontic/root modals, he discovers something that he finds confusing: the distribution of two particular types of modals is not so rigidly ordered as the

⁴⁰ *Huì* often (if not always) occurs sentence-initially in the interrogative form of *huì bú huì* ‘Will it be or not...’ (Huang, Li and Li 2009: 108). It is indeed not so exceptional, *néng* has the same restriction when it is used as an epistemic modal, as we saw in fn: 36. Butler (2003: 985, fn: 9) observes the same phenomenon in English: the epistemic can never occurs in an unmarked context, i.e., it always occurs in negative and interrogative environments.

others. According to his examples in (47) and (48), possibility modals can occur either higher or lower than deontic modals.

(47) *Zhāng Sān kěnéng bìxū lái.*
 Zhang San be.likely.to must come
 ‘It is likely that Zhang San must come.’

(48) *Zhāng Sān bìxū kěnéng lái,*
 Zhang San must be.likely.to come
(fǒuzé jìhuà huì shībài).
 otherwise plan will fail
 ‘It has to be the case that Zhang San is likely to come (otherwise the plan will fail).’
 (Lin 2012: 157)

Lin treats *bìxū* ‘must’ in the two sentences as the same type of modal, i.e., deontic. However, we have reasons to argue that *bìxū* ‘must’ in (48) is an epistemic necessity modal. As indicated in the English translation, *bìxū* ‘must’ in (48) has a very strong clausal reading, i.e., ‘It has to be the case that...’. According to the definition of epistemic modals by Cook (1978: 6), epistemic modals are used to modify the whole sentence and express the epistemic status of the truth value of the whole sentence. Clearly, this use of *bìxū* must be distinguished from its deontic/root usage in (47). There are two uses of *bìxū*, and this explains the flexible order between *bìxū* and *kěnéng*; looked at it from this perspective, Lin’s observation that possibility modals can occur either higher or lower than deontic modals is explained. It is in fact not surprising that *bìxū* ‘must’ and other deontic modals also have an epistemic reading, considering that epistemic and root modals are often realized by the same PF, as we have seen. It has been pointed out that besides the deontic reading, the counterpart of *bìxū* ‘must’ in English, *must* can also derive an epistemic reading under certain conditions. Barbiers (2002) points out that two types of complements will trigger the epistemic interpretation of a modal. The first type is stative complements which contain an individual-level predicate, as is illustrated in (49):

(49) John must be a native speaker of Finnish.
 (Barbiers 2002: 13)

The second type is the complements in the perfect in which the completion stage of the event has taken place in the past, as in (50):

- (50) They must have cleaned this room yesterday.
(Barbiers 2002: 13)

Interestingly, Mandarin has a phenomenon similar to what we see in (50). In Mandarin, the perfective aspect particle *le* cannot co-occur with the modals with a deontic reading, while it is compatible with modals or adverbs with an epistemic reading. Consider (51) and (52) from Tsai (2015).

- (51) *Akiu* *yīnggāi*^{epistemic}/*yīdìng*^{epistemic}/*kěnéng*^{epistemic}
Akiu should/surely/be.likely.to
qù-le *xiànchéng*.
go-PERF county
'It should be/surely is/is likely to be the case that A Q has gone to the county.'
- (52)* *Akiu* *yīnggāi*^{deontic}/*yīdìng*^{deontic} / *kěyǐ*^{deontic}
Akiu should/surely/be.permitted.to
qù-le *xiànchéng*.
go-PERF county
Tsai (2015: 248)

Tsai's (2008, 2015) explanation is the following: perfective aspect *le* in Mandarin needs to move to Tense (T) to satisfy "tense-anchoring". However, deontic modals are lower than T, so they will block the move of *le* due to the Head Movement Constraint. Epistemic modals/adverbs, on the other hand, are higher than T and will as such not block the movement of *le* to T. This explains why (51), with epistemic modals, is correct while (52), with deontic modals, is infelicitous. In line with Tsai, *bìxū* in the following sentence should also be seen as an epistemic modal.

- (53) *Akiu* *bìxū* *yǐjīng* *qù-le* *xiànchéng*
Akiu must already go-PERF county
(*cái* *kěnéng* *jiàn-de-dào* *tā*).
so.that. be.likely see-able-reach he
'It has to be the case that A Q has gone to the county (so that he is able see him).'

Now we can safely conclude that *bìxū* 'must' in Mandarin has both a root and an epistemic reading. For the same reasons, *děi* 'have to' and *yào* 'need/will', which are usually regarded as root modals, have corresponding epistemic uses, as is illustrated in (54):

- (54) *Děi/yào jǐ-ge rén qù ne?*
 have.to/need how.many-CL people go SFP
 ‘How many people are required to be there?’

Děi ‘have to’ and *yào* ‘need/will’ in (54) have a strong clausal reading and occur in front of the interrogative phrase. They are epistemic modals here.

To sum up, I conclude that all necessity modals in Mandarin have both an epistemic reading and a root reading, as summarized in (46), which incorporated Butler’s (2003) insights. Moreover, although the epistemic and root modals expressing the possibility reading are not always realized by the exact same form, they are clearly related, as can be seen in *néng* and *kěnéng*; *kěn* and *kěndìng*, etc.

3.2.4 Hierarchy of Mandarin Modals

Now that we have a new classification of Mandarin modals, the one in (46), we can consider the order between the different types of modals. According to the survey of Lin, there is a hierarchy between different types of Mandarin modals, as shown in (55) (Lin 2012: 158):

- (55)
- $$\text{Necessity} < \left\{ \begin{array}{l} \text{Possibility} < \text{Deontic} \\ \text{Deontic} < \text{Possibility} \end{array} \right\} < \text{Future} < \text{Deontic} < \left\{ \begin{array}{l} \text{Ability} \\ \text{Permission} \\ \text{Volition} \end{array} \right\}$$

The free order between possibility and deontic has been clarified earlier. Using the new classification in (46), we now can derive a new and more restricted hierarchy of Mandarin modals, as shown in (56).

- (56) Epistemic necessity < Epistemic possibility < Root necessity < Root possibility

Interestingly, although Mandarin allows multiple occurrences of different types of modals in one sentence, modals of the same type cannot co-occur in one sentence. Consider (57) with two epistemic possibility modals and (58) with two root possibility modals (Lin 2012: 158):

- (57) * *Tā kěnéng kěndìng lái.*
 He be.likely.to surely come

- (58)* *Zhāng Sān nénggòu kěyǐ lái.*
 Zhang San be.able.to can come

Note that changing the sequence of the two modals in (57) and (58) will not rescue the two sentences.

Lin assumes that the incompatibility may be due to a semantic conflict: these two modals belong to the same type and that is problematic. In fact, we find that when two necessity or two possibility modals occur in one sentence, they cannot be simultaneously interpreted as either epistemic or root. Instead, the first one will be interpreted as an epistemic and the second one as a root. Consider (59):

- (59) *Zhāng Sān* *yīnggāi*^{epistemic} *bìxū*^{root} *lái*.
 Zhang San should must come
 ‘It should be the case that Zhang San must come.’

The sentence in (59) is only interpretable if *yīnggāi* is interpreted as an epistemic and *bìxū* as a deontic modal.

The following examples from Lin (2012: 157) are reproduced here to illustrate the hierarchy in (56):

1) Epistemic necessity < Epistemic possibility

- (60) *Zhāng Sān* {**kěnéng*^{epistemic}} *yīnggāi*^{epistemic} {*kěnéng*^{epistemic}} *lái*.
 Zhang San be.likely.to should be.likely.to come
 ‘It should be the case that Zhang San is likely to come.’

2) Epistemic necessity < Root necessity

- (61) *Zhāng Sān* {**bìxū*^{root}} *kěnéng*^{epistemic} {*bìxū*^{root}} *lái*.⁴¹
 Zhang San must be.likely.to must come
 ‘It is likely that Zhang San must come.’

3) Root necessity < Root possibility

- (62) *Zhāng Sān* {**nénggòu*^{root}} *bìxū*^{root} {*nénggòu*^{root}} *lái*.
 Zhang San be.able.to must be.able.to come
 ‘Zhang San must be able to come.’

⁴¹ Recall the discussion of the two readings of *bìxū* in (47) and (48).

Now let's consider negation in Mandarin. In line with Cormack and Smith (2002) and Butler (2003), I assume that there are two positions for negation in Mandarin, one within the CP and the other above the vP. Consider the distribution between epistemic modals and negation adverb *bù* 'not' first. See (63) and (64):

(63)* *Zhāng Sān* *bù* *yīnggāi*^{epistemic} *lái-le*.⁴²
 Zhang San not should come-PERF

(64) *Zhāng Sān* *bù* *kěnéng*^{epistemic} *lái-le*.
 Zhang San not be.likely.to come-PERF
 'It is not likely that Zhang San has come.'

Interestingly, corresponding to what Butler found in English, the clausal negation *bù* 'not' can scope over the epistemic possibility modals without any problem as is shown in (64), but is not so acceptable when it occurs before the epistemic necessity modals, as illustrated in (63). Based on (63) and (64), we get the following order in (65), which is the same as Butler's:

(65) Epistemic necessity < Negation < Epistemic possibility.

Now turning to the relation between root modals and negation, in the following sentences, in order to guarantee a root reading of the modal, two necessity reading modals or two possibility reading modals will occur in one sentence. In this way, the latter modal must assume a root reading, as discussed earlier. Consider (66) and (67), cf. (59):

(66)* *Zhāng Sān* *yīnggāi* *bù* *bìxū* *lái*.
 Zhang San should not must come

(67) *Zhāng Sān* *yīnggāi* *bù* *néng* *lái*.
 Zhang San should not be.able.to come
 'It should be the case that Zhang San is not able to come.'

Based on (66) and (67), the hierarchy we get is as follows:

(68) Root necessity < Negation < Root possibility

⁴² As discussed earlier, the perfective aspect *le* is used in a sentence to ensure the epistemic reading of *yīnggāi*.

In conclusion, our survey of Mandarin modals results in exactly the same hierarchy as the one proposed by Butler (2003), which is repeated here as (69). See also the structure in (42).

- (69) Epistemic necessity < Negation < Epistemic possibility < (Strong) subject < Root necessity < Negation < Root possibility < vP

In what follows, I will investigate the relative order between additive *yě* and modals to determine where additive *yě* fits in the hierarchy.

3.2.5 The interaction between additive *yě* and modals

In section 3.1 above, it was shown that Mandarin additive *yě* is in the IP domain, lower than the outer subject ([Spec, TP]). According to (69), all epistemic modals are higher than the outer subject, therefore, the prediction is that epistemic modals are also higher than the additive *yě*. Let's see whether this prediction is borne out.

Suppose that Zhāng Sān and Lǐ Sì live together and they usually have a similar daily routine. Then consider (70), with an epistemic necessity *yīnggāi* 'should' and the stressed YE.⁴³

- (70) (Zhāng Sān zài jiā,)
 Zhang San at home
 Lǐ Sì {*yīnggāi*^{epistemic}} YE {**yīnggāi*^{epistemic}} zài jiā.
 Li Si should YE should at home
 ‘(Since Zhang San is at home,) it should be the case that Li Si is also at home.’

Now consider (71) with an epistemic possibility modal and an unstressed *yě*.

⁴³ I have tested the relative ordering between the different types of modals and *yě* with and without stress systematically. The outcome suggests that both variants of *yě* (with and without stress) occupy the same syntactic position. The examples in (70) – (74) are just some of the sentences I used in my survey.

- (71) *Zhāng Sān xǐhuan dǎ lánqiú,*
 Zhang San like play basketball
 {*kěnéng*^{epistemic}} *yě* {**kěnéng*^{epistemic}} *xǐhuan tī zúqiú.*
 be.likely.to YE be.likely.to like play football
 ‘Zhang San likes playing basketball, and it is likely that he also likes playing football.’

Same result is repeated when I test the relative position between other epistemic modals and the \pm stressed with *yě*. Although stress on *yě* influences the interpretation of the AC/ID pattern of the sentence, as discussed in Chapter 2, the additive *yě* with or without stress invariably occurs lower than the epistemic modals, as shown in (70) and (71).

Now let’s have a look at the relative order between root modals and the additive *yě*. Suppose that both Zhang San and Li Si are obliged to be present at a meeting, we get (72):

- (72) *Zhāng Sān lái, Lǐ Sì YE yīnggāi^{root} (??YE) lái.*
 Zhang San come Li Si YE ought.to YE come
 ‘Zhang San ought to come, and Li Si ought to come too.’

See also (73) with an unstressed *yě*:

- (73) *Nǐ yīnggāi duō shuō, yě yīnggāi (*yě) duō tīng.*
 you ought.to more speak YE ought.to YE more listen
 ‘You ought to speak more and also listen more.’

(72) and (73) indicate that additive *yě* is located higher than root necessity modals. Since root necessity is higher than lower negation and root possibility modals according to (69), it is predicted that additive *yě* should occur before the lower negation and root possibility modals too. As predicted, *yě* is always located higher than the lower negation adverb *bù* or *méi*, as in (74) and (75):

- (74) *Wǒ {yě} bú {*yě} rènshi tā.*
 I YE not YE know him
 ‘I don’t know him either.’

- (75) *Tā {yě} méi {*yě} qù-guo Ōuzhōu.*
 he YE not YE go-EXP Europe
 ‘He has not been to Europe either.’

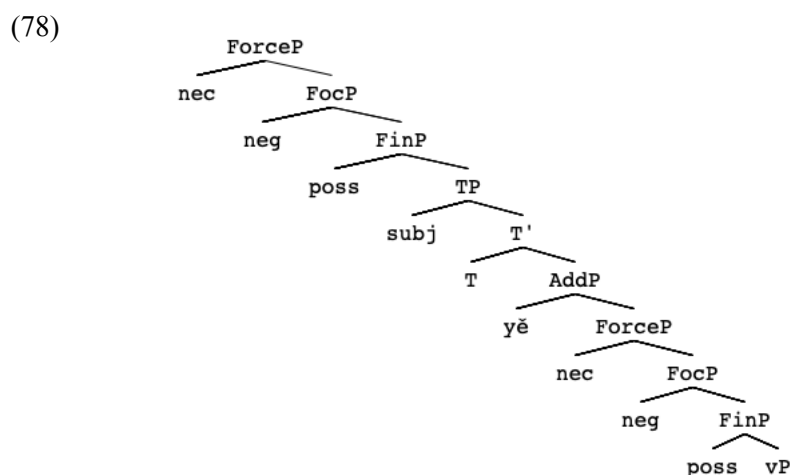
The same applies to root modals. It is shown that they can only occur after *yě*, see (76):

- (76) *Zhāng Sān* néng qù Běijīng,
 Zhang San be.able.to go Beijing
Lǐ Sì {*yě*} néng {**yě*} qù Běijīng.
 Li Si YE be.able.to YE go Beijing
 ‘Zhang San is able to go to Beijing, and so does Li Si.’

Based on the above survey, the position of additive *yě* can be determined in the hierarchy proposed in (69), as is shown in (77).

- (77) Epistemic necessity < negation < epistemic possibility < (strong) subject < **additive *yě*** < root necessity < negation < root possibility < vP

Thus, we can locate *yě* in Butler’s tree, as is shown in (78):



Now we have determined the syntactic position for the Mandarin additive particle *yě* based on Butler’s hierarchy and Lin’s survey. Recall that in the beginning of this chapter, we also mentioned another hierarchy, namely Cinque’s adverb hierarchy, which is claimed to be universal (Cinque 1999). It will be very interesting to compare the position of additive *yě* in Butler’s hierarchy and that in Cinque’s. To this end, a survey of the relative order between additive *yě* and other adverbs/adverbials will be presented in the following section.

3.3 The position of additive *yě* relative to other adverbs

In this section, I investigate the interaction of *yě* with other adverbs in Mandarin. According to Cinque (1999), Adv(erb)Ps occupy the specifier position of distinct functional heads, even though the heads are generally not overt. The rigid ordering of these AdvPs is a consequence of the rigid ordering of the corresponding functional heads. Here is Cinque's hierarchy once more (Cinque 1999: 106):

(79)

[*frankly* Mood_{speech act}] [*fortunately* Mood_{evaluative}] [*allegedly* Mood_{evidential}] [*probably* Mod_{epistemic}] [*once* T(Past)] [*then* T(Future)] [*perhaps* Mood_{irrealis}] [*necessarily* Mod_{necessity}] [*possibly* Mod_{possibility}] [*usually* Asp_{habitual}] [*again* Asp_{repetitive(I)}] [*often* Asp_{frequentative(I)}] [*intentionally* Mod_{volitional}] [*quickly* Asp_{celerative(I)}] [*already* T(Anterior)] [*no longer* Asp_{terminative}] [*still* Asp_{continuative}] [*always* Asp_{perfect(?)}] [*just* Asp_{retrospective}] [*soon* Asp_{proximative}] [*briefly* Asp_{durative}] [*characteristically(?)* Asp_{generic/progressive}] [*almost* Asp_{prospective}] [*completely* Asp_{sg.completive(I)}] [*tutto* Asp_{pl.completive}] [*well* Voice] [*fast/early* Asp_{celerative(II)}] [*again* Asp_{repetitive (II)}] [*often* Asp_{frequentative(II)}] [*completely* Asp_{sg.completive(I)}]

(Cinque 1999: 106)

Despite the fact that there are some differences between Cinque's hierarchy and Butler's (the latter embraces more semantic considerations), the resulting hierarchies are very similar (see also Butler 2003: 991). For instance, the epistemic modals/adverbs are higher than the root modals/adverbs and the necessity modals/adverbs are higher than the ones denoting possibility.

Cinque (1999: 39-41) also checked Mandarin data to verify his claim. He finds that Mandarin adverbs follow the following order:

(80) *lǎoshi-shuō* 'honestly' < *búxìng* 'unfortunately' < *xiǎnrán* 'evidently' < *xiànzài* 'now' / *yěxū* 'perhaps' < *míngzhìde* 'wisely' < *yībān* 'usually' < *chángcháng* 'often' < *yǐjīng* 'already' < *bú-zài* 'no longer' < *zǒngshì* 'always' < *yìzhí* 'continuously' / *gānggāng* 'just' < *wánquán* 'completely' < *hǎo* 'well'

If we map the adverb order of Mandarin onto the universal hierarchy of adverbs and functional heads in (79) based on Cinque's survey of Mandarin adverbs and some data from my survey, we get the following hierarchy of functional projections of Mandarin adverbs, as demonstrated in (81):

- (81) [*lǎoshi-shuō* ‘honestly’ Mood_{speech-act} [*búxìng* ‘unfortunately’ Mood_{evaluative} [*xiǎnrán* ‘evidently’ Mood_{evidential} [*hǎoxiàng* ‘seemingly’ Mod_{epistemic} [*xiànzài* ‘now’ T [*yěxu* ‘perhaps’ Mod_{irrealis} [*bìrán* ‘necessarily’ ‘Mod_{necessity} [*yídìng* ‘surely’ Mod_{possibility} [*míngzhì-de* ‘wisely’ Mod_{root} [*yìbān* ‘usually’ Asp_{habitual} [*yòu* ‘again’ Asp_{repetitive} [*chángcháng* ‘often’ Asp_{frequentative} [*yǐjīng* ‘already’ T (Anterior) [*bú-zài* ‘no longer’ Asp_{terminative} [*zǒngshì* ‘always’ Asp_{perfect} [*yìzhí* ‘continuously’/ *gānggāng* ‘just’ Asp_{retrospective} [*wánquán* ‘completely’ Asp_{completive} [*hǎo* ‘well’ Voice (< V)

The Mandarin hierarchy in (81) almost completely matches with Cinque’s universal hierarchy. The only exception is the order between the habitual adverb *yìbān* ‘usually’ and subject-oriented adverb *míngzhì-de* ‘wisely’.⁴⁴ subject-oriented adverbs are higher than the habitual adverbs in Mandarin according to Cinque (1999:40).⁴⁵ Note that the Mandarin hierarchy in (81) looks neater: in Cinque’s universal hierarchy, subject-oriented adverbs and the corresponding functional heads, i.e., the root modals, are inserted in between different Asp(ect)Ps. In (81), all Mandarin AspP adverbs are lower than the Mod(al)P adverbs. Meanwhile, the Mandarin hierarchy in (81) is in a way comparable to Butler’s hierarchy of modals, for instance, the segment

[*bìrán* Mod_{necessity} [*yídìng* Mod_{possibility} [*míngzhì-de* Mod_{root}

in (81), which is lower than the Mod_{epistemic}, presumably corresponds to the root modals in Butler’s terms, i.e., the functional heads of Mod_{necessity} and the Mod_{possibility} in (85) respectively are the ‘root necessity’ modal and the ‘root possibility’ modal in Butler’s hierarchy.

Now, returning to *yě*, recall that the syntactic position of additive *yě* is higher than root necessity but lower than the outer subject. If we translate this to Cinque’s adverb hierarchy, it is predicted that additive *yě* will occur in a position higher than the corresponding adverbs of Mod_{necessity} and all adverbs below them. Our survey below supports this prediction. For the sake of optimal comparison, note that I adopt Cinque’s classification and his labels for the adverbs in (79) for discussing Mandarin cases.

⁴⁴ Cinque (1999: 89) argues that root modals (including modals expressing volition, obligation or ability/permission) and subject-oriented adverbs have a special connection: for instance, they both ‘retain [their] orientation on the subject’. That is why the subject-oriented adverbs are associated to Mod_{root}.

⁴⁵ Cinque notes that for some native speakers, *yìbān* can also occur before *míngzhì-de*.

3.3.1 Adverbs that occur before additive *yě*

Earlier on, we have demonstrated that speaker-oriented adverbs as CP adverbs occur higher than additive *yě*; the examples are repeated here as (82) with a speech-act adverb and (83) with an epistemic adverb.

- (82) {*Lǎoshi-shuō*}, *tā* {**lǎoshi-shuō*} *yě* {**lǎoshi-shuō*}
 frankly he frankly YE frankly
gàosù-le wǒ zhēnxiàng.
 tell-PEFR I truth
 ‘Frankly, he also told me the truth.’

- (83) *Zhāng Sān zǒu-le,* {*hǎoxiàng*} *Lǐ Sì* {*hǎoxiàng*}
 Zhang San leave-PERF seemingly Li SI seemingly
yě {**hǎoxiàng*} *zǒu-le.*
 YE seemingly leave-PERF
 ‘Zhang San left, and it seems that Li Si left too.’

The same applies to two other types of speaker-oriented adverbs, e.g., evaluative adverbs, as illustrated in (84), and evidential adverbs, as in (85):

- (84) {*Xìnghǎo*} *Lǐ Sì yě* {**xìnghǎo*} *zǒu-le.*
 luckily, Li Si YE luckily leave-PERF
 ‘Luckily, Li Si also left.’

- (85) {*Xiǎnrán*} *tā yě* {**xiǎnrán*} *bù zhīdào wèishénme.*
 obviously he YE obviously not know why
 ‘Obviously, he does not know the reason either.’

As predicted, time adverbs and irrealis adverbs usually occur before *yě*, see (86) and (87):

- (86) *Wǒ* {*xiànzài*} *yě* {**xiànzài*} *xiǎng hē diǎnr dōngxi.*
 I now YE now want drink bit thing
 ‘Now, I want to drink something too.’

- (87) *Tā* {*huòxu*} *yě* {*?huòxu*} *zhīdao-le.*
 he perhaps YE perhaps know-PEFR
 ‘Perhaps he also knows it now.’

3.3.2 Adverbs that occur after additive *yě*

We predict that the additive *yě* will be located higher than the necessity adverbs and all other lower adverbs in Cinque's hierarchy. It can be verified by the following survey.

1) Necessity adverbs/Possibility adverbs

- (88) *Zhāng Sān yào lái Běijīng,*
 Zhang San will come Beijing
Lǐ Sì {??bìrán} YE {bìrán} yào lái Běijīng.
 Li Si necessarily YE necessarily will come Beijing
 'Zhang San will come to Beijing and Li Si will necessarily come to Beijing.'

- (89) *Zhāng Sān yào qù Běijīng,*
 Zhang San will go Beijing
{??bìrán} yě {bìrán} yào qù Tiānjīn.
 necessarily YE necessarily will go Tianjin
 'Zhang San will go to Beijing and he will necessarily go to Tianjin too.'

Note that we have a stressed *YE* in (88) and unstressed *yě* in (89); the judgement of the relative position between *yě* and the necessity adverbs remains unchanged. Most of the native speakers that were consulted for this study find that it is more natural to place *bìrán* 'necessarily' after *yě*, although some also point out that when we place an obvious stress on *bìrán* 'necessarily', it can precede *yě* too. I assume it is a pure prosodic matter and not relevant to our discussion. The same judgement applies to possibility adverbs, as is shown in (90) and (91).

- (90) *Zhāng Sān yào lái Běijīng,*
 Zhang San will come Beijing
Lǐ Sì {??yídìng} YE {yídìng} yào lái Běijīng.
 Li Si necessarily YE surely will come Beijing
 'Zhang San will come to Beijing and Li Si will surely come too.'

- (91) *Zhāng Sān yào qù Běijīng,*
 Zhang San will go Beijing
{??yídìng} yě {yídìng} yào qù Tiānjīn.
 surely YE surely will go Tianjin
 'Zhang San will surely go to Beijing and he will surely go to Tianjin too.'

2) Root/subject-oriented adverbs

It is shown in 3.1 that *yě* occurs before the subject-oriented (corresponding to Mod_{root}) adverbs. And when the same adverbs occur before *yě*, their interpretation changes: they can only have a clausal reading. In other words, the subject-oriented reading of these adverbs can only be derived when they occur after additive *yě*. When they occur before *yě*, they become evaluative adverbs, i.e., a speaker-oriented adverb with a clausal reading. The examples are repeated here as (92) and (93):

(92) a. *Ailisī yě cōngming-de^{root} huídá-le zhè-ge wènti.*
 Ailisi YE cleverly answer-PERF this-CL question
 ‘Alice has also cleverly answered the questions.’

(93) b. *Ailisī cōngming-de^{evaluative} yě*
 Ailisi cleverly YE
huídá-le zhè-ge wènti.
 answer-PERF this-CL question
 ‘Cleverly, Alice also answer the question.’

3) Habitual adverbs

(94) *Tā {??wǎngwǎng} yě {wǎngwǎng} qù nàli chīfàn.*
 he usually YE usually go there have.meal
 ‘He also used to go there to have meals.’

Similarly, the habitual adverb *wǎngwǎng* ‘often, frequently’ occurs after *yě*, and only if the adverb is stressed, does it occur before *yě*.

Even though necessity adverb/possibility adverbs and habitual adverbs can still occur in front of additive *yě* under certain circumstances, all the adverbs below them in the hierarchy of (81) can never occur before additive *yě*, as is shown below.

4) Restitutive adverb: *yòu* ‘again’

(95) *Wǒ {*yòu} yě {yòu} yǒu-le xīn péngyou.*
 I again YE again have-PERF new friend
 ‘I also have new friends again.’

5) Frequency adverbs: *chángcháng* ‘often’

- (96) *Wǒ* {**chángcháng*} *yě* {*chángcháng*} *tīng* *yīnyuè*.
 I often YE often listen music
 ‘I also often listen to music.’

6) Aspectual adverbs: *hái* ‘still’/ *yǐjīng* ‘already’/ *búzài* ‘no longer’/ *zǒngshì* ‘always’/ *gāng* ‘just’

- (97) *Tā* {**hái*} *yě* {*hái*} *bù* *zhīdào*.
 he still YE still not know
 ‘He also hasn’t known yet.’

- (98) *Wǒ-de péngyou* {**yǐjīng*} *yě* {*yǐjīng*} *jiéhūn-le*.
 my friend already YE already marry-PERF
 ‘My friend has already got married too.’

- (99) *Tā* {**búzài*} *yě* {*búzài*} *chōuyān le*.
 he no.longer YE no.longer smoke SFP
 ‘He doesn’t smoke any longer.’

- (100) *Tā* {**zǒngshì*} *yě* {*zǒngshì*} *yí-ge rén* *chīfàn*.
 he always YE always one-CL people have.meal
 ‘He always has meals by himself too.’

- (101) *Wǒ* {**gāng*} *yě* {*gāng*} *chī-wán fàn*.
 I just YE just eat-finish meal
 ‘I have just eaten my meal too.’

- (102) *Wǒ* {**wánquán*} *yě* {*wánquán*}
 I completely YE completely
lǐjiě nǐ-de xiǎngfǎ.
 understand your thought
 ‘I completely understand your thought too.’

In sum, all adverbs in the scope of the AspP projection occur after the additive *yě*, as predicted. The survey results in this section provide another piece of evidence to the claim that *yě* is located higher than AspP.

3.3.3 Additive *yě* in Mandarin adverb hierarchy

Now, we can insert the additive *yě* in the Mandarin adverb hierarchy based on Cinque, as is shown below:

- (103) [*lǎoshi-shuō* Mood_{speech-act} [*búxìng* Mood_{evaluative} [*xiǎnrán* Mood_{evidential} [*hǎoxiàng*. Mod_{epistemic} [*xiànzài* T [*yěxǔ* Mod_{irrealis} [***yě*** Add [*bìrán* Mod_{necessity} [*yídìng* Mod_{possibility} [*míngzhì-de* Mod_{root} [*yìbān* Asp_{habitual} [*yòu* Asp_{repetitive} [*chángcháng* Asp_{frequentative} [*yǐjīng* T (Anterior) [*bú-zài* Asp_{terminative} [*zǒngshì* Asp_{perfect} [*yìzhí/gānggāng* Asp_{retrospective} [*wánquán* Asp_{completive} [*hǎo* Voice (< V)

Earlier I have shown where *yě* is in the hierarchy relative to modals based on Butler (2003) (cf. (78)) and (103) shows the position of *yě* relative to other adverbs in the hierarchy based on Cinque (1999). When we look at the semantic labels of the modals in (78) and those of the adverbs in (103), we find the same result for the placement of the additive *yě*, i.e., it is in the IP zone higher than the adverbs or modals expressing necessity.

In Chapter 2, I mentioned that the other *yě*, i.e., the parametric *yě*, can be used in certain ‘special’ contexts in which it does not behave like an additive adverb (for instance, it is resistant to accommodation etc.). Specifically, in sentences with a *wh*-phrase or a disjunctive phrase in the left periphery expressing ‘no matter’, like in (104), or sentences involving ‘even’, like in (105).

- (104) (*Wúlùn*) *shéi yě shuǐfú-bu-liǎo tā.*
 no.matter who YE not.be.able.to.persuade he
 ‘Nobody can persuade him.’

- (105) *Tā lián yí-jù-Héland-huà yě bú huì.*
 (s)he even one-CL-Dutch-language YE not can
 ‘He doesn’t even know one Dutch sentence.’

If we argue that it is a different *yě* in these contexts, it will be interesting to see whether it has a different syntactic position from the additive *yě*. In the following section, a survey of the distribution of *yě* in these contexts will be conducted.

3.4 The position of parametric *yě*

In this section, I explore the position of parametric *yě*, i.e., the *yě* we find in *no matter* and *even/even if* contexts, by examining the relative position of *yě* with four types of modals in Butler's classification.

First consider the relation between *yě* and root modals in sentences with *wúlùn* 'no matter':

- (106) *Wúlùn yù-dào shénme kùnnan,*
 no.matter encounter what difficulty
*tā {yě} yīnggāi^{root} /yuànyì {*yě} jiānchí-xiàqu.*
 he YE should/be.willing.to YE carry.on
 'No matter what difficulties he may encounter, he should/is willing to carry on.'

As is shown in (106), *yě* in this context must occur before the root modals, the root necessity modal *yīnggāi* and the root possibility modal *yuànyì*, which is exactly like the normal additive *yě*. But how about a context in which it co-occurs with epistemic modals, which are argued to be higher than additive *yě* in 3.2? Consider (107):

- (107) *Wúlùn yù-dào shénme kùnnan,*
 no.matter encounter what difficulty
tā {yě} yīnggāi /kěnéng {?yě} huì jiānchí-xiàqu.
 he YE should^{epistemic}/be.likely.to YE will carry.on
 'No matter what difficulties he may encounter, it should/be likely to be the case that he will carry on.'

Recall that in (70) and (71) the additive *yě* must occur after the epistemic modals. However, *yě* in the *no matter* context seems to be different: it can occur in front of the epistemic modals, both in the necessity and the possibility reading, as we see in (107).⁴⁶

By examining the relative distribution of *yě* and modals in *no matter* contexts, we conclude that *yě* in this context is higher in the structure than the additive one. This is also clear from the position of *yě* relative to the adverbs corresponding to these modals. Based on (103), the following adverbs can respectively be viewed as the corresponding adverbs (in the specifier position

⁴⁶ Some but not all native speakers accept *yě* in post-modal position in this sentence, but they do point out that in a position preceding the modal, *yě* sounds better than its post-modal counterpart. It is possible that the inconsistent judgment here is due to the interference of the additive use of *yě*.

of corresponding functional heads according to Cinque) of modals expressing epistemic necessity, epistemic possibility, root necessity and root possibility: *zhùdìng* ‘unavoidably’/*hǎoxiàng* ‘seemingly’ /*bìrán* ‘necessarily’ /*gùyì* ‘deliberately’. Now let’s see how they interact with *yě* in *no matter* contexts.

(108) *Wúlùn dírén duōme qiángdà,*
 no.matter enemy how strong
 {*yě*} *zhùdìng* {*?yě*} *huì shībài.*
 YE unavoidably YE will fail
 ‘No matter how strong your enemies are, they will unavoidably be beaten.’

(109) *Wúlùn dírén duōme qiángdà,*
 no.matter enemy how strong
 {*yě*} *hǎoxiàng* {*?yě*} *xià-bu-dǎo tā.*
 YE seemingly YE scare-not-fall he
 ‘No matter how strong the enemies are, they seemingly cannot intimidate him.’

(110) *Wúlùn duō-nán-de rènwu,*
 no.matter how-tough-ATTR task
tā {*yě*} *bìrán* {**yě*} *wánchéng.*
 he YE necessarily YE fulfill
 ‘No matter how tough the task is, he will always fulfill it.’

(111) *Wúlùn duō-róngyì-de tíwù,*
 no.matter how-easy-ATTR question
tā {*yě*} *gùyì* {**yě*} *zuò-cuò.*
 he YE deliberately YE do-wrong
 ‘No matter how easy the question is, he deliberately makes errors.’

The above sentences show that *yě* in *no matter* contexts can (and in some cases, must) occur before all four types of adverbs, which, on the basis of the logic followed so far, means that it is higher in the structure too. A similar situation holds in the *lián* ‘even’/*jíshǐ* ‘even-if’ contexts. Consider the following sentences:

(112) *Lián zhème qiángdà-de dírén*
 even so strong-ATTR enemy
 {*yě*} *zhùdìng* {**yě*} *huì shībài.*
 YE unavoidably YE will fail
 ‘Even such a strong enemy will unavoidably be beaten.’

(113) *Lián guówáng {yě} hǎoxiàng {*yě} huì lái.*
 even king YE seemingly YE will come
 ‘Even the kind will seemingly come.’

(114) *Lián zuì nán-de rènwu*
 even most tough-ATTR task
*tā {yě} bìrǎ {*yě} wánchéng.*
 he YE necessarily YE fulfill
 ‘He will even fulfill the toughest task.’

(115) *Lián zuì róngyì-de tí*
 even most easy-ATTR question
*tā {yě} gùyì {*yě} zuò-cuò.*
 he YE deliberately YE do-wrong
 ‘He deliberately makes errors even in the easiest question.’

The above sentences show that both epistemic adverbs and root/subject-oriented adverbs occur after *yě* in a *lián...yě* sentence. As before, the reason that *yě* cannot occur after these adverbs can presumably be attributed to its higher position in the structure.

The fact that the position of *yě* in these special contexts is higher than many clausal adverbs provides another account to the following infelicitous sentence from Paris (1998: 143):

(116)* *Lián Zhāng Sān bùxìng-de yě qù-le.*
 even Zhang San unfortunately YE go-PERF
 (Paris 1998: 143)

Paris argues that the ungrammaticality of (116) is due to the fact that a *lián* constituent cannot function as a topic and thus cannot occupy the topic position, i.e. the sentence-initial position in (116), which is higher than the clausal adverb *bùxìng-de* ‘unfortunately’. However, I propose a different way to explain the infelicity of (116), based on the distributional properties of *yě*: it is syntactically higher than speaker-oriented adverbs, so it must precede them. If we place *yě* in its proper position, as we do in (117), the sentence is good, and the *lián* constituent is still in sentence initial position.

(117) *Lián Zhāng Sān yě bùxìng-de qù-le.*
 even Zhang San YE unfortunately go-PERF
 ‘Unfortunately, even Zhang San left.’

Similarly, *yě* is also found in a higher position than the speaker-oriented adverbs in sentences with the conjunction *jíshǐ* ‘even-if’, given in (118)-(121):

(118) *Jíshǐ* *dírén* *zài* *qiángdà*,
 even.if enemy more strong
 {*yě*} *zhùdìng* {**yě*} *huì* *shībài*.
 YE unavoidably YE will fail
 ‘Even if the enemies are stronger, they will unavoidably be beaten.’

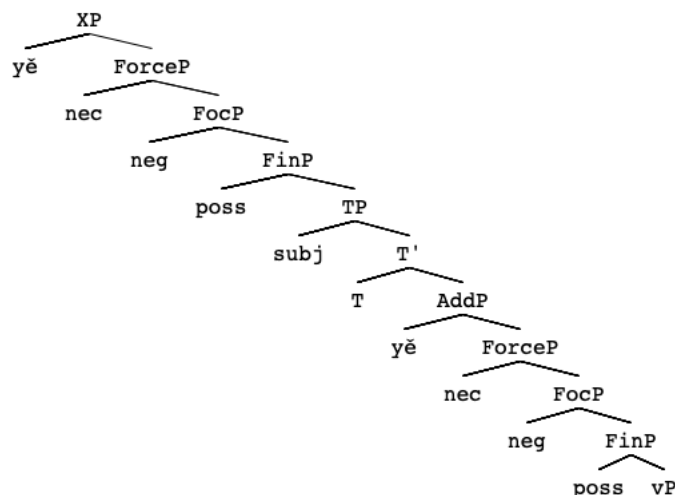
(119) *Jíshǐ* *zài-dà-de* *tiǎozhàn*,
 even.if more-big-ATTR challenge
tā {*yě*} *hǎoxiàng* {?*yě*} *bú* *pà*.
 he YE seemingly YE not afraid
 ‘Even if the challenge is bigger, he seems not to be afraid.’

(120) *Jíshǐ* *zài-dà-de* *tiǎozhàn*,
 even.if more-big-ATTR challenge
tā {*yě*} *bìrán* {**yě*} *kèfú*.
 he YE necessarily YE overcome
 ‘Even if the challenge is bigger, he will necessarily overcome.’

(121) *Jíshǐ* *tí* *zài* *róngyì*,
 even.if question more easy
tā {*yě*} *gùyì* {**yě*} *zuò-cuò*.
 he YE deliberately YE do-wrong
 ‘Even if the question is easier, he will deliberately make errors.’

All sentences in this survey consistently lead to the following conclusion: the structural position of parametric *yě* in *no matter* sentences *even/even if* sentences is quite high and presumably higher than additive *yě*. In line with Butler’s hypothesis that the CP layer and IP layer share, in the sense of repeat, the same sequence of functional projections, I would like to propose the following structure, including two different positions for *yě*:

(122)



As is clear from the above, we have good reasons to put parametric *yě*, in the CP layer of the sentence. However, as is equally clear (from the sentences we have reviewed) in actual sentences, parametric *yě* still follows the subject, which we had reasons to locate in a specifier position in the IP domain. How can we account for this mismatch? There are two possible accounts. One is to say that the parametric *yě* is physically low, but is interpreted high. This has been proposed for perfective marker *le* in certain sentences by Cheng (2019). The second possible account is that parametric *yě* is base-generated in CP and, one way or another, leads to the movement of the subject to a specifier position higher than parametric *yě*. The details of such accounts would have to be worked out, also in relation to the positions of adverbs. I will not decide between these two options now; I will leave this for future research, as both options also have interesting consequences for some of the analyses presented elsewhere in this thesis.

The structure in (122) is in full accord with Cinque's (1999) proposal that different positions of one same adverb must be licensed by different functional heads. If Cinque's approach holds, one important requirement will be, as was critically pointed out by Ernst (2007: 1011), that the two adverbs licensed by distinct heads must have two distinct interpretations. The interpretation of additive *yě* has been discussed in Chapter 2. In the following chapter, the interpretation of *yě* in these non-additive contexts will be explored. As already mentioned, we will establish that a different interpretation, i.e. scalarity, of *yě* exists in these non-additive contexts. This would confirm that there are two different instantiations of *yě*, both syntactically and semantically.

3.5 Concluding remarks

In this chapter, I have proposed that additive *yě* is an IP adverb and I provided several pieces of evidence to substantiate this proposition. A detailed survey of the position of additive *yě* relative to modals and adverbs was conducted to determine the syntactic position of *yě*. Crucially, on the basis of Butler's four-way split of modals and the corresponding modal hierarchy, I have proposed a new classification and hierarchy of Mandarin modals. We have seen that the Mandarin additive particle sits higher than the root necessity modals and lower than the outer subject in the structure. This is further evidenced by a survey on the position of additive *yě* relative to adverbs on the basis of Cinque's presumably universal adverb hierarchy.

A survey of the position of *yě* relative to modals and adverbs in *no-matter* and *even* contexts shows that *yě* in these contexts sits higher in the structure than epistemic necessity modals. Therefore, we conclude that there are in fact two syntactic positions for *yě*, one is in the IP domain, and the other is higher, most likely in the CP. This is in fact consistent with Butler's idea that the same sequence of projections is to be found in both the CP layer and the IP layer.

In light of the proposal that there are two positions for *yě*, it would be good to establish that there are also two different interpretations for the two positions. In the following chapter, I will argue that *yě* in *no matter* and *even/even if* contexts has in fact a different interpretation. I will eventually argue that *yě* in these contexts is a scalar *yě* (in line with Hole (2017)) instead of an additive/non-scalar *yě*.

Chapter 4 Scalar *yě*⁴⁷

In chapter 3, I demonstrated that there are two positions for *yě*, namely, one in the IP domain, and another in the CP. The survey showed us that the parametric *yě* in some contexts, i.e., *no-matter* and *even/even if* contexts, seemed to be higher than the additive *yě*. Apart from the syntactic difference, establishing the interpretational difference of the two use types of *yě* can lend more credit to the hypothesis that there are in fact two distinct *yě*s. Recall that in section 2.5.6, I proposed that all unstressed *yě*s with a preceding stressed AC could have a different interpretation than the additive one. I argued that all the cases with a stressed AC preceding an unstressed *yě* should be seen as *lián* ‘even’...*yě* sentences.⁴⁸ Therefore, the *yě* discussed in 2.5.6 can also be seen as a parametric use of *yě*. In contrast to additive *yě*, the parametric *yě* is not characterized by the requirement of a verifiable alternative in the background and allows accommodation. Consider the *even* sentence in (1) and the *no-matter* sentence in (2), both of which were mentioned previously in chapter 2:

- (1) *Nǐ zhīdao ma? Zuótiān-de huódòng*
 you know SFP Yesterday-ATTR activity
(lián) GUOWANG yě lái-le.
 even king YE come-PERF.
 ‘Did you know? Even the king attended the activity yesterday.’

- (2) *Wúlùn dírén duōme qiángdà,*
 no.matter enemy how strong
yě zhùdìng huì shībài.
 YE unavoidably will fail
 ‘No matter how strong your enemies are, they will unavoidably be defeated.’

Note that although the use of *lián*...*yě* and *wúlùn*...*yě* in the two sentences triggers “alternative” readings (i.e., via accommodation), there is no need to have a verifiable alternative or a preceding “active context” (as defined by Kripke 2009). This clearly shows that there is a difference between *yě* in

⁴⁷ A version of this chapter has been published as Yang (2019).

⁴⁸ According to many earlier publications (Alleton 1972; Sybesma 1996; Zhang 1997; Hole 2004), the parametric *yě* has a different stress pattern from its basic/additive use, i.e., it cannot be stressed. This reminds us the stressed AC+ unstressed *yě* pattern that we discussed in chapter 2.

contexts like (1) and (2) and the additive one. Then the question arises how we can interpret *yě* in these contexts. In line with Tovená (2006), who argues that Italian *neanche* is in fact scalar in contexts the presupposition of which can be satisfied by accommodation, I argue in this chapter that there is a correlation between the possibility of using *yě* in these contexts and the presence of a scalar reading as well as a reference to an extremity on the scale in question. I will first introduce several basic notions necessary for our discussion and some observations on the distribution of *yě* in these contexts.

4.1 Basic notions and observations

4.1.1 Scalarity and free choice

When the meaning of lexical items involves the expression of a degree or gradability, there is necessarily a “scale” on which the degree is measured (as a result, these expressions are also scalar). As such, a scale can be seen as “ordered sets of degrees” (Kennedy 1997, 2007) or “a collection of all possible values of representation” (Lassiter 2011) with an ordering on these values (see also Solt 2015; Bolinger 1972; Constantinescu 2011). Sometimes one extreme (like the end point) of the scale is also evoked. A typical example is an *even* sentence like (3).⁴⁹

(3) *Even the king will come.*

To interpret this sentence, the alternatives in the background should be considered, besides the fact that they are ordered, in this case socio-hierarchically: other people with a lower social status will also come. The *even* focus also anchors the end point of the scale because the king, who is considered to have the highest social status, is an extreme of the scale of the likelihood of showing up at the event in question. That is to say, the king is considered to be the most unlikely person to show up. This is in line with Giannakidou’s (2007) analysis that *even* elements impose an ordering of individuals on the predicate of the clause on a likelihood scale. Thus, an *even* phrase is inherently scalar.

Another notion relevant to our discussion is “free choice item” (FCI). The following characteristics are often mentioned to define the nature of an

⁴⁹ The interpretation of an *even* sentence typically involves a highest point in a contextually determined scale of unlikelihood, surprise, etc. (Jacobs 1983; König 1991; Hole 2004 and Hole 2017). That is to say, the *even* focus introduces the most unlikely or surprising candidate in the set of all possible alternatives.

FCI: “freedom of choice” (Vendler 1967), “indifference” (Fintel 2000; Giannakidou 2001), and “indiscriminate arbitrariness” (Horn 2005: 185; Duffley and Larrivé 2010: 11). Thus, an FCI requires that all variables denoted by the phrase should be regarded as absolutely equal and arbitrary as to which one the predication applies to. In other words, there is no need to introduce a scale to interpret the phrase and even if there is one, the end points of the scale in a purely unstressed FCI are “not given any particular status” (Duffley and Larrivé 2010: 9). FCIs denote nonspecific and non-gradable variables. A well-known example is *any key* in the English sentence *Hitting any key will reactivate the screen*: all the possible keys in the range of reference should be seen as equally valid candidates to which the predication applies. Therefore, we can see that the alternatives denoted by an FCI are not ordered on a scale.

4.1.2 The distribution of *yě* in *no matter* and *even* contexts

In this section, the focus is the use of *yě* in some special contexts, for instance, in sentences with a *wh*-phrase or a disjunctive phrase in the left periphery expressing *no matter* like (4) or sentences involving *even* like (5) (see also in chapter 1).

- (4) (*Wúlùn*) *shéi* *(*yě/dōu*) *shuǐfú-bu-liǎo* *tā*.⁵⁰
 no.matter who YE/DOU not.be.able.to.persuade him
 ‘Nobody can persuade him.’
- (5) *Tā lián yí-jù-Héland-huà.* *(*yě/dōu*) *bù* *huì*.
 (s)he even one-CL-Dutch-language YE/DOU not can
 ‘He doesn’t even know one Dutch sentence.’

As mentioned in Chapter 1, *yě* in these contexts is defined by Hole (2004) as a “parametric *yě*”. Although I will eventually conclude that *yě* in these contexts would be aptly referred to as a “scalar *yě*”, until we reach this conclusion, I use Hole’s term. In addition, an alternative particle, *dōu*, can also be used here. In its basic use, *dōu* typically forces the distribution of a predicate over a plural noun phrase preceding it. As such, it is called a distributor (Lee 1986; Liu 1990; Lin 1998; Cheng 1991, 1995) or a maximality operator (Giannakidou and Cheng 2006; Cheng 2009; Cheng and

⁵⁰ The word *wúlùn* ‘no matter’ can co-occur with a *wh*-phrase without changing the meaning. Lin (1996: 56–58) claims that a null *wúlùn* exists in all *no matter* sentences without the overt *no matter* word. He treats *wh...dōu* constructions as elliptical *wúlùn* constructions.

Giannakidou 2013). Some researchers (Jiang 2008; Chen 2008; Jiang and Pan 2013) link *dōu* to scalarity. Note, however, that this chapter is only about *yě* and not about *dōu*. *Dōu* will only be mentioned when it is necessary to compare its use with *yě*, in order to make the distributional and other properties of *yě* come out clearly.

After a close investigation of the distribution of *yě* in these parametric contexts, we find that *yě* is not always acceptable, especially in *no matter* contexts.

- (6)* *Wǒ wúlùn tí shénme tiáojiàn, tā yě dāying.*
 I no.matter mention what condition he YE agree
 ‘No matter what conditions I bring up, he will agree.’
 (Liu 2001: 246)

- (7)* *Wǒmen shénme dǐxì yě zhīdao!*
 we what exact.details YE know
 ‘We know all the exact details!’
 (Hole 2004: 87)

There are two different ways to save the use of *yě* in the abovementioned sentences. The first is to insert a negative adverb, as shown in (8) and (9):

- (8) *Wǒ wúlùn tí shénme tiáojiàn,*
 I no.matter mention what condition
tā yě bù dāying.
 he YE not agree
 ‘No matter what conditions I bring up, he will not agree.’

- (9) *Wǒmen shénme dǐxì yě bù zhīdào!*
 we what exact.details YE not know
 ‘We don’t know any exact detail!’

In view of sentences such as these, Hou (1998: 620), Liu (2001: 246) and others conclude that parametric *yě* is mainly used in negated contexts.

The second way to save sentences such as (6) and (7) is to insert a modal; see (10) and (11):⁵¹

⁵¹ Some informants report that sentences (10) and (11) get better when the *wh*-elements are stressed. I will come back to this later.

- (10) *Wǒ wúlùn tí shénme tiáojiàn,*
 I no.matter mention what condition
tā yě huì dāying.
 he YE will agree
 ‘No matter what conditions I bring up, even the harshest ones, he will agree.’
- (11) *Wǒmen shénme dǐxì yě yào zhīdào!*
 we what exact.details YE must know
 ‘We must know all the exact details, even the most trivial ones.’

It seems that, besides negation, modals can also save *no matter* sentences with the parametric *yě*. Hole (2004) reports on a survey that the outcome confirms the claim that adding a modal can make *yě* acceptable in a *no matter* sentence. One of his examples is (12):

- (12) *Wǒ shénme-yàng-de shū yě*
 I what-kind-ATTR book YE
**(děi/yīnggāi/yào/xiǎng) kàn.*
 must/should/must/want read
 ‘I must/should/want to read any kind of book.’
 (Hole 2004: 87)

Furthermore, it should be mentioned that *dōu* is good in sentence (12) even if there is no modal, as is shown in (13).

- (13) *Wǒ shénme-yàng-de shū dōu kàn.*
 I what-kind-ATTR book DOU read
 ‘I read all kinds of books.’

In short, we can conclude that the use of parametric *yě* in *no matter* contexts is restricted, unlike that of *dōu*: either it is used in a negated context or in an affirmative context with a modal verb. However, the question of how and why parametric *yě* is licensed in the abovementioned contexts is still a puzzle. In what follows, I argue that the distribution of parametric *yě* is conditioned by two factors. First, I show that the presence of scalarity in the meaning of the sentence is a necessary condition for the use of parametric *yě*, but it is not a sufficient condition; what is also needed, and this is the second factor, is the expression of the extreme of the scale.

4.2 Clear evidence that *yě* is associated with scalarity

4.2.1 Non-scalar sentences

If there is a connection between the occurrence of parametric *yě* and scalarity, I predict, first, that, in explicitly non-scalar contexts, the use of *yě* would lead to ungrammaticality and, second, that parametric *yě* is always acceptable in sentences that involve a scale one way or another. In this section, these predictions will be put to the test.

As to the first prediction, consider (14) (= (28) in Chapter 1), a sentence from the *Hànyǔ Shuǐpíng Kǎoshì* (HSK) composition corpus, in which the use of parametric *yě* is marked by the native graders as “CC” (short form of *cuò cí* ‘wrong word’), presumably because, as I hypothesize, the interpretation of the *wh*-word in the sentence cannot be associated with scalarity. This is clear from (14), in which all the possible alternatives denoted by the *wh*-word *shénme* are enumerated in the preceding part of the sentence in a “flat” way without any bias or hierarchy.

- (14) *Wǒ zhēnde xué-le hěn-duō dōngxi:*
 I really learn-PERF very-many thing
wénhuà-shang-de, xuéshù-shang-de, yányǔ-shang-de,
 culture-on-ATTR academic-on-ATTR language-on-ATTR
shénme dōu {CC yě} yǒu.
 what DOU YE have
 ‘I really learned a lot, for instance, on culture, academics, language and so on. Everything is included.’

A similar example is given by Lin (1996). In this example, the *wh*-phrase *nǎ-yī-ge* ‘which-one-CL’ can only have a pure free choice/non-scalar reading due to the domain provided by the preceding phrase, and parametric *yě* is incompatible with this sentence.

- (15) *Zhè-jǐ-ge háizi, wúlùn nǎ-yī-ge*
 this-several-CL child no.matter which-one-CL
*dōu/*yě hěn cōngmíng.*
 DOU/YE very bright
 ‘As for these children, no matter which one is bright.’
 (Lin 1996: 64)

Consistent with Lin, Giannakidou and Cheng (2006: 137–138) observe that the Mandarin D-linked *wh*-phrase *nǎ*-CL ‘which’ exhibits a distribution which is the same as that of polarity FCIs in Greek, Spanish and Catalan (e.g., they

are not acceptable in episodic contexts). In other words, it is more like a pure FCI than other *wh*-phrases. As predicted, *yě* is bad in their sentence in (16).

- (16) *Nǎ-ge xuéshēng dōu/*yě kěyǐ jìnlai.*
 which-cl student DOU/YE can enter
 ‘Any student can enter.’
 (Giannakidou and Cheng 2006: 137)

In (14)–(16), we have three *wh*-phrases with a pure free choice reading, in other words, no scale is involved in the interpretation. As predicted, *yě* is bad in all these sentences.

The distribution of parametric *yě* in *no matter* sentences with a disjunctive phrase also supports the proposed claim. It is often believed that a disjunctive phrase has a similar implicature as an FCI, because the two (or more) alternatives in a disjunct are usually considered to be ordered in an arbitrary way and are not arranged on any hierarchical scale. Chierchia (2013: 86–90) notes the “FC [free choice] phenomenon” which takes place when disjunction occurs under a modal element. He argues that the interpretation of *You may take this cake or that cake* and *You may take any cake* “have the same logical structure”. Therefore, we predict that, if the disjunctive phrase has a pure free choice reading, parametric *yě* will be dispreferred. This is confirmed by (17):

- (17) **Wúlùn nǐ háishì tā, wǒ yě xǐhuān.*
 no.matter you or he I YE like
 ‘No matter it is you or him, I simply like.’

We have seen from (14)–(17) that, whenever there is no scalar reading, as is the case in disjunctive phrases and *no matter* contexts in which all alternatives are enumerated without any bias, parametric *yě* cannot be used.

4.2.2 Scalar sentences

On the other hand, in explicitly or inherently scalar contexts, *yě* should be acceptable, and this is indeed the case, as we will see now.⁵² The most obvious example is an *even* sentence. As we discussed earlier, the *even* phrase is inherently scalar and also anchors a minimal or maximal extreme on the scale.

⁵² It is important to emphasize that it is not the goal of this research to determine exactly what the source or the nature of the scale is (in formal semantic or other terms). All we want to show is that there is a correlation between the presence of a scalar reading and the possibility of using *yě*.

If our hypothesis is correct, parametric *yě* should be good in *even* contexts, and it is, as shown in (5), repeated here as (18):

- (18) *Tā lián yí-jù-Hélan-huà yě bú huì.*
 (s)he even one-CL-Dutch-language YE not can
 ‘He doesn’t even know one Dutch sentence.’

In this sentence, we have *lián* ‘even’ introducing a preposed minimizer and *yě* is good in this sentence.

Parametric *yě* is also used in *even if* sentences, as shown in (19).

- (19) *Jíshǐ guówáng lái, wǒ yě bú qù.*
 even if king come I YE not go
 ‘Even if the king comes, I won’t go.’
 (Hole 2004: 223)

To examine the use of parametric *yě* (and *dōu*) by native speakers in *lián/even* contexts and *even if* contexts, I conducted a corpus study using the Modern Chinese Language Corpus⁵³ of the national language committee of China. The result is summarized in (20).

⁵³ <http://www.ncorpus.org/>. The Modern Chinese Language Corpus includes 9,487 tagged essays with a long-time span and diverse registers. It covers a total of 162,875 words.

(20) Word frequency of *dōu* and *yě* in different types of *even/even if* sentences

Type of <i>even/even if</i> sentences	Number of <i>yě</i> sentences	Number of <i>dōu</i> sentences
<i>Lián</i> sentences	1,194	872
<i>Jíshǐ</i> sentences ⁴²	734	17
<i>Jìbiàn</i> sentences	53	0
<i>Nǎpà</i> sentences	30	8
<i>Jiùsuàn</i> sentences	24	0
<i>Jiùshì</i> sentences	6	0

Two observations can be made based on the corpus data:

- 1) both *yě* and *dōu* can be used in *lián* contexts;
- 2) there is a preference for *yě* over *dōu* in *even/even if* sentences, a preference which is more obvious in *even if* sentences than in *lián/even* sentences.

In any case, *yě* is always good in the sentences with *even* elements, thus supporting the claim of the necessary relation between *yě* and scalarity.⁵⁴

Another kind of inherently scalar expression, the superlative expression (Fauconnier 1975 and Fauconnier 1978), can also license the use of parametric *yě*, as shown in (21).

- (21) *Tā zuì-gāo-de shān yě pá-guo.*
 (s)he highest hill YE climb-EXP
 ‘(S)he has climbed the highest hill before.’

⁵⁴ Furthermore, it is interesting to find that, different from what was found in *lián/even* contexts, it seems that the use of *dōu* is restricted in *even if* contexts. Again, I will not dig into why this would be so in this study (which is about *yě* and not about *dōu*). But at least, we can see that *yě* and *dōu* are different distributionally in *no matter* and *even if* contexts. According to Hole (2004: 228), this is due to the interpretation of *dōu* foci not being able to refer to the alternative propositions that differ from the asserted proposition in factuality; thus, *dōu* cannot be used in (41).

Similarly, parametric *yě* is also compatible with the indefinite minimizer, denoting the smallest possible quantity in a domain such as “(say) a word” and “(lift) a finger”, which is often seen as a negative polarity item (NPI) with an inherent *even* semantics (Heim 1984; Hole 2004: 198, Shyu 2016: 1385). See (22):

- (22) *Tā* *yí-jù-huà yě shuō-bu-chūlai.*
 (s)he one.word YE not.be.able.to.speak
 ‘(S)he couldn’t even say a word.’
 (Paris 1994: 249; Hole 2004: 198)

What all sentences in (18)–(22) have in common is the element of scalarity, including the denotation of an extreme on the relevant scale. In addition, in all cases, the use of parametric *yě* is felicitous. In combination with what we observed in the non-scalar free choice sentences in (14)–(17), in which the use of *yě* was infelicitous, these sentences show that there is an association between parametric *yě* and scalarity.

4.2.3 Some less straightforward cases

There are, however, also sentences containing parametric *yě* for which it is less clear that there is an association with scalarity, at least at first sight as shown in (23) and (24) as examples:

- (23) *Shéi yě *(bú) huì guài nǐ.*
 who YE not will blame you.
 ‘No one will blame you.’
- (24) *Tā shénme yě *(bù) shuō.*
 He what YE not say
 ‘He doesn’t say anything at all.’
 (Hole 2004: 206–207)

In the sentences such as (23) and (24), we have the *wh*-words *shéi* and *shénme* and no obvious scalar item, inherent or otherwise, such as *even* or a minimizer, and yet, the use of *yě* is still grammatical. However, in contrast to the sentences (14)–(17), (23) and (24) clearly involve scalarity: (23) means that ‘No one will blame you, not even a single person!’ and (24) expresses that he ‘will not say even a single word’. In other words, the *wh*-words in both sentences are interpreted as if they are minimizers. It should be noted that there is a negative adverb *bù* in both sentences, and without the negation, the sentences are bad. Thus, we have reasons to believe that it is the negation

element that turns the in principle non-gradable and nonspecific *wh*-elements (like FCIs, as in (14)) into minimizers, thus invoking a scalar reading, just like NPIs. This is in line with Hole's treatment of preposed *wh*-elements such as *shéi* and *shénme* in (23) and (24) as strong polarity items (Hole 2004: 199–209, cf. Krifka 1999). Therefore, if the *wh*-element in negative *no matter* contexts can yield a scalar NPI-like reading, it is not a surprise that parametric *yě* can be used here.

Accepting the claim that it is the negation that ensures the scalar/NPI reading of *wh*-phrases in (23) and (24), the following affirmative sentence in which parametric *yě* is used requires a different account.

- (25) *Nǐmen yǒuqián-rén, nǎlǐ yě néng qù,*
 You rich-people where YE can go
nǐ yě dài wǒ qù ba.
 you also take I go SFP
 'You rich people can go anywhere you want. Please take me with you too.'
 (Hou 1998: 620)

Although there is no negation in sentence (25), the use of *yě* is not unexpected, since, earlier on, we can see that, when a modal occurs in *no matter* contexts as in (10)–(12), the use of *yě* is possible. Sentence (25) contains the modal *néng* 'can'. If our hypothesis that scalarity is necessary to license the use of parametric *yě* is right, then it is natural to speculate that modals contribute to building a scalar reading into their sentences. Interestingly, the link between modals and scalarity was extensively studied by Lassiter (2011). Lassiter claims that, generally, modals, including epistemic, deontic, and bouletic modals, even those which are not overtly gradable, have a semantics built on scales. Instead of treating modals as quantifiers over possible worlds, he has a different approach to the semantics of modality according to which modals are measure functions that map propositions to points on a scale and compare them to a threshold value. Based on these conclusions, we can say that, with the aid of modals, the non-ordered alternatives denoted by the *wh*-phrase in *no matter* contexts become ordered on a certain scale. The *wh*-element in *no matter* sentences with modals can thus be treated as an NPI-like item, just like those we saw in (23) and (24) with negation. As a consequence, the use of parametric *yě* is possible. The fact that modals play an important role in licensing parametric *yě* in affirmative *no matter* sentences can consolidate Lassiter's claim.

Here is another interesting observation: it seems that the sentence-initial NP *nǐmen yǒuqiánrén* 'you rich people' in (25) plays a role in facilitating the use of parametric *yě* in the sentence as well. It can be taken to serve as a kind

of “restrictor” which restricts the domain of “the places that people can go to” and within the restricted domain,⁵⁵ the *no matter wh*-element *nǎlǐ* ‘where’ acquires a reference; it can be seen as pointing at the extreme of the scale, namely “the places which cost the most”. In fact, (25) yields a reading which can be paraphrased with a sentence containing a superlative expression, as given in (26).

- (26) *Nǐmen yǒuqián-rén,*
 you rich-people
zuì-guì-de dìfang yě néng qù.
 most-expensive-ATTR place YE can go
 ‘You rich people even can go to the most expensive places.’

Interestingly, the requirement of the presence of an alternative, in this case an “extreme”, is something that parametric *yě* has in common with additive/basic *yě*. I will elaborate on this point later on.

The role of modals in building scales can also provide an account for the grammatical use of *yě* in a sentence with a free choice-like disjunctive phrase, as in (27).

- (27) *Búlùn báitiān wǎnshang,*
 no.matter day-time evening
tā yě yào diǎn-zhe yóudēng.
 he YE will ignite-PROG oil-lamp
 ‘No matter whether it is during the day or in the evening, he always wants to keep the oil lamp burning.’
 (Hole 2004: 219, cf. Alleton 1972: 65)

It is the root modal *yào* which provides the scalarity element to license the use of parametric *yě* in (27). In addition, one of the two alternatives denoted by the phrase can be viewed as an extreme point on the scale, namely *báitiān* ‘during the day’. That is because it is a natural and logical thing to have an oil lamp burning in the evening, and hence this should be considered as common sense or even a background assumption. The pragmatic importance of the disjunctive phrase falls on the (most unlikely) alternative *báitiān* ‘during the day’. In other words, the disjunctive phrase in the abovementioned sentences denotes two unequal/scalar alternatives on a scale introduced by the modal verb, and one of the alternatives anchors the extreme point of the scale, thus

⁵⁵ In Chapter 2, I mentioned that, according to Rooth’s alternative semantics, the set *C* serving as a domain of quantification might be derived either from the semantics of focus or some pragmatic process to fix the value or add further information.

making it possible to use parametric *yě*. Sentence (27) indeed yields a scalar interpretation, i.e., an *even* reading, as paraphrased by (28).

- (28) (*Lián*) *báitiān* *tā* *yě* *yào* *diǎn-zhe* *yóudēng*.
 even day-time he YE will ignite-PROG oil-lamp
 ‘He wants to keep the oil lamp burning even in the day time.’

This is analogous to the observation earlier that *wh*-words can at times denote non-FC alternatives. That is to say, disjunctive phrases, exactly like the *wh*-phrases, can be interpreted as (extreme) points on a scale evoked by a modal in *no matter* contexts. Indeed, in the absence of a modal, the use of *yě* becomes degraded, as demonstrated in (29).⁵⁶

- (29) *Búlùn* *báitiān* *wǎnshang*,
 no.matter day-time evening
tā *dōu*/**yě* *diǎn-zhe* *yóudēng*.
 he DOU/YE ignite-PROG oil-lamp
 ‘No matter whether it is during the day or in the evening, he always wants to keep the oil lamp burning.’

It should be noted that sentence (29) is minimally different from (27) in the absence of an overt modal, that is to say, we still have two alternatives that are biased according to world knowledge, as mentioned earlier, but the use of *yě* is infelicitous in (29). The minimal pair formed by (27) and (29) shows that the scale is introduced by the modal and not by pragmatics or context more generally.

Although *dōu* and *yě* can be used interchangeably in (25) and (27), they may result in a difference in meaning. Whenever parametric *yě* is used, the preceding disjunctive phrase can only have a scalar or *even* reading, as indicated in (26) and (28). In contrast, *dōu* is compatible with both a nonspecific free choice reading and a specific scalar reading. This is in line with our hypothesis that parametric *yě* is exclusively scalar.

4.2.4 Stress

Another observation, this time related to prosody, seems to provide additional evidence that the *wh*-elements before parametric *yě* are scalar. As noted earlier, for sentences such as (10), (11) and (23), native speakers tend to put stress on the *wh*-phrase. In view of the fact that it has been noticed (Krifka

⁵⁶ Thanks to one of the reviewers for raising the question and providing her/his judgment of (29).

1995; Haspelmath 1997: 125; Beaver and Clark 2008; Duffley and Larrivé 2010: 9) that stress is a crucial factor in activating the scalar effect of an FCI, I believe that this is another sign that there is a link between *yě* and scalarity. In contrast, the use of *dōu* in *no matter* sentences does not necessarily require a stressed *wh*-phrase. See (30):

- (30) *Zhè-ge háizi shénme dōu bú pà.*
 this-CL child what DOU not afraid
 ‘This child is not afraid of anything.’
 (Cheng and Giannakidou 2013: 124)

Depending on how this sentence is pronounced, i.e., with or without stress on the *wh*-element, the *wh*-element is ambiguous between an FCI/non-scalar and an NPI/scalar reading, as shown in (31).

- (31) *Zhè-ge háizi shénme/SHÉNME dōu bú pà.*
 this-CL child what DOU not afraid
 Non-scalar reading: ‘There is nothing that this child is afraid of.’
 Scalar reading: ‘This child is not afraid of anything at all—not even the scariest thing.’

However, if we use parametric *yě* instead of *dōu*, we have to stress the *wh*-word, and only the scalar reading is available, as shown in (32).

- (32) *Zhè-ge háizi *shénme/SHÉNME yě bú pà.*
 this-CL child what YE not afraid
 ‘This child is not afraid of anything—not even of the scariest thing.’

We have noticed that native speakers are inclined to place stress on the *wh*-word *shénme* ‘what’ when they read the sentence with *yě* and not necessarily when the sentence contains *dōu*. This intonation pattern is the same in sentences with a minimizer, such as *yī-diǎn* ‘a bit’.

- (33) *Bìnggrén jīntiān Yī-diǎnr yě méi chī.*
 patient today one.bit YE not eat
 ‘The patient did not eat even a little bit today.’

4.2.5 Concluding remarks

This all leads to the following hypothesis:

- (34) Parametric *yě* is always associated with scale: only when there is a scale, parametric *yě* can appear and whenever we have parametric *yě*, we have a scalar interpretation.

The scalarity in the sentences with parametric *yě* may come from different sources, such as inherently scalar (or scale invoking) elements such as *lián*/even, minimizers or NPI-like wh-elements or disjunctive phrases with the aid of negation or modals.

4.3 The presence of an extremity

Earlier in this chapter, I mentioned that scalarity is a necessary condition for the felicitous appearance of *yě*, but not a sufficient one. The felicitous sentences with the parametric *yě* we have seen so far contain an element denoting the extreme on the relevant scale, and our hypothesis is that this is the second necessary condition for sentences with *yě* to be grammatical: the presence of an extremity.

It has been noted in the literature that there are cases in which the use of *yě* is ungrammatical even though the sentence in question contains a modal verb or negation. Hole (2004: 89, 222) presents two of these exceptions involving a modal verb, cited from Eifring (1995) as shown in (35) and (36):

- (35) *Tā shuō shénme*
 (s)he say what
*wǒ dōu/*yě huì dāying de.*
 I DOU/YE will agree PRT
 ‘Whatever he says, I will agree to it.’
 (Eifring 1995: 147)

- (36) *Bùguǎn cóng shénme dìfāng dōu/*yě kěyǐ shàng-qu.*
 no.matter from what place DOU/YE can ascend-go
 ‘You can ascend from any place.’
 (Eifring 1995: 170)

In (35) and (36), there are modals which, in principle, provide a scale for the sentences. However, the sentences are not grammatical. What distinguishes these sentences from a sentence such as (25) is that they do not contain

expressions to restrain the domain and anchor to a specific extreme on the scale. We can account for (37), which contains a negation, in the same way.

- (37) *Wúlùn nǐ háishì tā, wǒ dōu/*yě bù xǐhuān.*
 no.matter you or he I DOU/YE not like
 ‘No matter it is you or him, I simply don’t like.’

Different from (27) in which one alternative can be easily seen as the extreme point of the scale, it is hard to treat either alternative denoted by the disjunctive phrase in (37) as one of the extremes on the scale.

I conclude that, in addition to (34), which says that there is a link between scalarity and the presence of *yě*, felicitous sentences with *yě* must also always contain an expression referring to one of the extremes on the scale.

4.4 Another piece of evidence

There is another piece of evidence for us to claim that a bare *wh*-word is not an FCI in sentences with parametric *yě*. Hole (2004) observes the following facts, which he finds hard to account for:

- (38) *Tāmen shénme dōu/*yě gǎiliáng.*
 They what DOU/YE change.for.the.better
 ‘No matter what, they change everything for the better.’
- (39) *Tāmen shénme dōu/yě gǎiliáng-le.*
 They what DOU/YE change.for.the.better-PERF
 ‘They have changed everything for the better, no matter what it is.’
 (Hole 2004: 222)

The only formal difference between the two sentences is the appearance of the perfective aspect marker *le* in sentence (39). But in that sentence, the use of parametric *yě* is legitimate, while in (38) it is not. The perfective particle *le* is used after the verb to denote the occurrence or completion of an action or an event and adding it can change a sentence with a habitual or nonveridical interpretation into a sentence with an episodic and veridical meaning, as illustrated in the following sentences:

- (40) *Wǒmen kàn Měiguó diànyǐng.*
 we see the U.S. film
 ‘We watch American films.’

- (41) *Wǒmen kàn-le Měiguó diànyǐng.*
 we look-PERF the U.S. film
 ‘We saw (an/some) American film(s).’

Sentence (40) expresses a habitual reading. As such, it cannot have an episodic reading and it cannot denote a specific event. In contrast, sentence (41) denotes that one specific event “watch an American film or some American films” has happened: it has an episodic interpretation. According to Giannakidou (1997, 2001), Giannakidou and Cheng (2006), and Cheng and Giannakidou (2013), FCIs are cross-linguistically not admitted in episodic sentences, the so-called “anti-episodicity effect”.⁵⁷ One example from Cheng and Giannakidou (2013) is given here as sentence (42) to show that the typical Mandarin FCI *rèn hé* ‘any’ is incompatible with an episodic context:

- (42) **Rèn hé rén dōu jìn-lái-le.*
 any person DOU enter-come-PERF
 (Cheng and Giannakidou 2013: 13)

However, bare *wh*-phrases demonstrate a different ability to appear in an episodic sentence as illustrated in sentence (43):⁵⁸

- (43) *Shéi dōu jìn-lái-le.*
 who DOU enter-come-PERF
 ‘Everyone came in.’
 (Cheng and Giannakidou 2013: 13)

Cheng and Giannakidou (2013) argue that different from *rèn hé* in which the component *rèn* ‘regardless’ provides dependent world variables and is inherently intensionalized, a bare *wh*-phrase does not have dependent world

⁵⁷ Giannakidou (1997, 2001) proposes that FCIs are incompatible with the veridical and episodic contexts (also including episodic negation and questions), because there is no binding operator in such contexts. She argues that different from the NP whose regular non-FC determiner is constant with the real world and therefore only denotes “a set of actual individuals”, the variables in the FCI need binding by an operator, a Q-operator, such as a generic, habitual, modal or intensional operator. This dependency as a defining feature of FCIs can also be treated as a kind of presupposition that must be satisfied in order to use some specific variables (see also Giannakidou and Cheng 2006).

⁵⁸ *Dōu* is in general preferred in *no matter* sentences, especially in sentences with a bare *wh* phrase as in (43). I have nothing to contribute to the discussion on the nature of *dōu*. In general, *dōu* can occur in scalar contexts, but in contrast to *yě* it is not restricted to such contexts.

variables and thus can occur in episodic contexts (for the details, see the original paper). However, as we saw earlier, the bare *wh*-phrase in *no matter* sentences may under certain conditions yield a non-FC reading. Going back to (38) and (39), we observe that adding the aspect particle makes the use of parametric *yě* better in the sentence. The account here is quite straightforward: the bare *wh*-word in (38) and (39) should be interpreted differently: that is, *shénme* is a pure FCI in (38), but an item with a scalar interpretation in (39). After all, *shénme* cannot be interpreted as an FCI in sentence (39) because, as we saw, FCIs are incompatible with episodic contexts. The interpretation of the *wh*-phrase will be different: it is a scalar item and not an FCI anymore. The grammaticality of *yě* in sentence (39) can thus be accounted for.

Although both parametric *yě* and *dōu* can be used in sentence (39), the choice of *yě* or *dōu* will affect the meaning of the sentence. If parametric *yě* is used here, the sentence is forced to have the scalar or *even* reading: “They have improved everything for the better, even the most unnoticeable parts!” In contrast, the use of *dōu* can have both the scalar and the universal reading. It should be noted that there are repercussions for the intonation: when parametric *yě* is used in sentence (39), the *wh*-word is stressed by my native speaker consultants; they report that without the stress, the sentence is still bad. However, when *dōu* is used, the *wh*-word can be either stressed or unstressed, and when it is stressed we get the scalar reading. This is consistent with Chierchia’s (2013) observation that stress is often the trigger of scalarity.

4.5 A note on *lián...yě* sentences: What does *lián* do?

If *wh*-elements can yield an *even* interpretation as we discussed earlier, a question that comes up is whether *lián* ‘even’ is compatible with *wh*-words. The general consensus seems to be that it is not and the question is why not.⁵⁹ As we have seen, in *no matter* sentences with *yě*, *wh*-words generally yield a scalar reading rather than an FC reading. (23) is repeated here as (44).

- (44) *Shéi yě bú huì guài nǐ.*
 who YE not will blame you.
 ‘No-one will blame you.’

If the *wh*-word *shéi* ‘who’ in sentence (44) is scalar like an NPI minimizer, there is no reason to think that it cannot co-occur with *lián* ‘even’, since *lián/even* is scalar and can introduce a scalar minimizer as we have seen in sentence (5), repeated here as (45):

⁵⁹ Thanks to Lisa Cheng for raising this question.

- (45) *Tā lián yí-jù-Héland-huà yě/dōu bú huì.*
 (s)he even one-CL-Dutch-language YE/DOU not can
 ‘He doesn’t even know one Dutch sentence.’

However, simply adding a *lián* in front of the *wh*-element will result in a bad sentence, as shown in (46).

- (46) **Lián shéi yě bú huì guài nǐ.*
 even who YE not will blame you.
 Intended: ‘No-one will blame you.’

It seems that *lián* is not compatible with a *wh*-word, even if the *wh*-word has a scalar interpretation. The question is then which function of *lián* makes it incompatible with *wh*-elements in such sentences. Chen (2008) claims that *lián* is the source of scalarity. Shyu (2016: 1380, cf. Xiang 2008), however, distinguishes two roles of *lián* in a sentence. It serves as a focus particle that evokes alternatives in the context but it also serves as a scalar operator that places the asserted focus at an end point on a scale of likelihood or expectedness in the set. In line with this, I would like to propose that the major role of *lián* in the *lián...yě* pattern is to introduce the extremity on the scale. It has been noted (e.g., by Shyu 2016: 1359–1361) that Mandarin minimizers such as *yī-CL N* ‘one-classifier N’ or *yídiǎn-N* ‘a little N’, which denote a minimal quantity, extent or degree, often occur in *lián...yě* sentences. One of the Shyu’s sentences is reproduced as (47) here:

- (47) *Tā lián yí-jù huà dōu méi shuō.*
 he even one-CL word DOU not speak
 ‘He didn’t say even a single sentence.’
 (Shyu 2016: 1361)

In this sentence, the minimizer *yí-jù huà* ‘one sentence’ in combination with *lián* denotes the minimal entity on the scale of “people say something”; hence, *lián* can be seen as introducing an extreme on the scale. It is necessary to note that a phrase such as *yí-jù huà* ‘one sentence’ is not necessarily interpreted as a minimizer. With *lián*, it is a minimizer, but without *lián* and without being stressed, it does not have to be and as such does not necessarily introduce the extremity. As noted by Shyu (2016: 1360), the interpretation of *yī-CL-N* phrases in a normal negative sentence is ambiguous. For instance, (48) indeed has three interpretations, and only in the third interpretation, the phrase *yí-jù huà* ‘one sentence’ has the extremity reading.

- (48) *Tā méi shuō yí-jù huà.*
 he not speak one-CL word
 (i) ‘He didn’t say one sentence (, but he said more than one).’
 (ii) ‘He didn’t say one sentence (rather, he said a lot).’
 (iii) ‘He didn’t say any sentence.’
 (Shyu 2016: 1360)

Therefore, since the extremity reading in (47) does not originate from, or is not enforced by, the minimizer itself, it is reasonable to assume that *lián* is the element which introduces the extremity.

If we take another Mandarin word meaning ‘even’, *shènzhì*, into consideration, we can identify *lián*’s role even better. Consider (49):

- (49) *Tā shènzhì/*lián méi shuō yí-jù huà.*
 He even not speak one-CL-word
 ‘He did not even say a word.’

Sentence (49) shows the different syntactic restrictions between *shènzhì* and *lián*, namely *lián* cannot be put right before the verb as adverbs can. What is even more important to point out, however, is that *yí-jù huà* ‘one sentence’ in sentence (49) does not necessarily anchor the end point or extremity of the expectedness scale of “people say something”, which is different from what we observed for sentence (47). Sentence (49) can simply be uttered to express surprise in a situation that is contrary to people’s expectation. For instance, suppose that all of you were in a karaoke gathering where everyone was expected to sing happily. However, Zhang San was not happy at that moment, he did not sing and he even did not say anything. We can then say: *Tā shènzhì méi shuō yí-jù huà*. ‘(He did not sing any song, and) he even did not say a word.’ Therefore, *shènzhì* here is used to introduce an unexpected event. As we can see, the adverb *shènzhì*, in contrast with *lián*, does not necessarily associate with the phrase expressing the extremity, i.e., the minimizer *yí-jù huà* ‘one sentence’. *Lián*, however, requires a phrase expressing an extremity immediately following it, and this is another reason (besides the syntactic reason) why *lián* is not good in sentence (46).

Lián’s function of introducing an extremity can account for its unacceptability in *no matter* sentences with a scalar reading. As mentioned in chapter 2, according to Lin (1996: 90), the *wh*-phrase selected by *wúlùn* ‘no matter’ must denote possible individuals rather than actual individuals. For instance, as we have seen, *wh...dōu* cannot occur in an episodic event as demonstrated in (50a) and (51a), because in an episodic environment, the *wh*-subject has an actual individual reading as shown in (50b) and (51b):

(50) a. **Shéi* *dōu* *zài* *chànggē*.
 who DOU PROG sing.song

b. *Shéi* *zài* *chànggē?*
 who PROG sing.song
 ‘Who is singing?’

(51) a. **Shéi* *dōu* *yǐjīng* *líkāi-le*.
 who DOU already leave-PERF

b. *Shéi* *yǐjīng* *líkāi-le?*
 who already leave-PERF
 ‘Who has already left?’
 (Lin 1996: 89)

Based on the abovementioned observation, I propose that a *wh*-word in *no matter* contexts is not referential in the way required by *lián*. Therefore, the requirement of an immediate extremity which *lián* can point at cannot be satisfied if it co-occurs with a *wh*-word, like in *no matter* contexts. Again, *shènzhì* demonstrates the difference, because it can indeed occur before the *wh...dōu/yě* construction. See the minimal pair in sentences (52) and (53).

(52) *Tā shènzhì shénme yě méi shuō*.
 he even what YE not say
 ‘He did not even say anything.’

(53)**Tā lián shénme yě méi shuō*.
 he even what YE not say
 Intended: ‘He did not even say anything.’

In short, in accordance with Shyu (1995), I argue that the function of *lián* is to introduce the extreme point of the scale provided by the context and non-referential *wh*-elements, by their very nature, cannot co-occur with *lián*: being non-referential, they cannot serve as one right category for *lián* to point at.

However, according to Lin, the *wh*-word in episodic sentences denotes an actual individual and thus is referential. If this is indeed the case, we predict that *wh*-words with a referential reading can occur in the *lián...yě* pattern. In fact, this prediction is borne out, as is shown in (54) and (55), cf. (50a) and (51a).

- (54) *Nǐ zhīdào lián shéi yě zài chànggē ma?*
 you know even who YE PROG sing.song SFP
 ‘Do you know even who is singing?’
- (55) *Nǐ zhīdào lián shéi yě yǐjīng líkāi-le ma?*
 you know even who YE already leave-PERF SFP
 ‘Do you know even who has already left?’

In (54) and (55), we have two questions concerning episodic contexts, in which the question word *shéi* can refer to a specific person in the episodic contexts (“you know who I mean”). They can be seen as “show master” questions. For instance, sentence (54) can be paraphrased as follows: one specific person whom the speaker already knows is singing. In addition, the speaker believes that he/she is the person who is the least likely person to be singing. As we see, the *lián...yě* pattern is compatible with it. This leads to the following conclusion:

- (56) *Lián* introduces the extremity. Non-referential *wh*-elements which cannot point at any extreme cannot co-occur with it.

However, if this is correct, it seems that we are facing a contradiction. As discussed earlier, a *wh*-phrase in *no matter* contexts can denote an extreme on the scale relying on the preceding contextual elements. However, they cannot be introduced by *lián* which functions as an extremity determiner, as in (46) and (53). We may attribute this to the fact that *lián* formally requires an explicit ‘extremity’ phrase and a *wh*-phrase functioning as a minimizer is not good enough. Interestingly, my native speaker consultants agree that although (57) is not a very good sentence, it sounds better than sentence (58) without the preceding domain “restrictor”.

- (57)? *Nǐmen yǒuqián-rén, lián nǎlǐ yě néng qù.*
 you rich-people even where YE can go
 Intended: ‘You rich people can go anywhere you want.’
- (58) ?? *Nǐ lián nǎlǐ yě néng qù.*
 you even where YE can go
 Intended: ‘You can go anywhere you want.’

This consolidates my earlier claim that the preceding domain “restrictor” contributes in anchoring the extreme in the *no matter* sentences with *wh*-phrases, but at the same time it is clear that the incompatibility of *lián* ‘even’ with a *wh*-expression is still in need of further investigation.

4.6 Scalar *yě*

4.6.1 Hole’s approach and the null \emptyset_{even} hypothesis

Now that we have some idea of the function of *lián*, let us reconsider the function of *yě*. Hole (2008, 2013, 2017: 389–409) argues that the parametric *yě* should be regarded as a different linguistic sign from the basic additive *yě*, i.e., a scalar *yě*. Hole (2017) treats the scalar use of *yě* as the head of a scalarity phrase. The preceding constituent, such as the phrase introduced by *lián* (an “ad-focus” particle in Hole’s terms), is in a spec-head relationship with the scalarity head *yě*.⁶⁰ In light of Hole’s approach, our earlier observation that *yě* always requires a scalar interpretation of its preceding constituent may attribute to the scalarity head nature of *yě* and the fact that the constituent introduced by the ad-focus particle is in an Agreement/spec-head relationship with the head. It can also account for the fact that sometimes the “ad-focus” particle expressing *even* can be dropped: as long as the scalar *yě* is there, the sentence is grammatical and the scalar interpretation will hold. That is simply because the scalarity head is a more crucial element to guarantee the scalar interpretation than the ‘ad-focus’ marking devices. Moreover, based on Hole, whenever the “ad-focus” marker is not there, we shall assume that a “null marker” is there to instantiate the constituent with an ‘even’ reading.

Following this, the fact that the *no-matter* constituent in the sentence with the scalar *yě* should be interpreted scalarly can be explained. Since the *no-matter* constituent is also located in the specifier position of a scalar projection signaled by *yě*, we can assume that there is a null *even/lián*, i.e., \emptyset_{even} , preceding the *wh*-phrase or the disjunctive phrase to introduce the scalar interpretation of the focus constituent. Moreover, the null \emptyset_{even} can be activated in a scalar context with the help of negation or modals. Furthermore, the word expressing *no-matter*, i.e., *bùguǎn* or *wúlùn*, has nothing to do with

⁶⁰ Hole (2017) treats the scalar use of *yě* as the head of a scalarity phrase and it signals that the embedded assertion is counted as ‘much’. He also claims a link between the scalar interpretation of the preceding foci and the focus particle. In his approach, *lián* is viewed as an ad-focus particle whose immediately dominating nodes stand in a spec-head relationship with the scalarity head *yě*. The fact that *lián*-foci have been preposed is the result that the object has to move to the specifier position of the scalarity head. Another *even*-word in Mandarin, *shènzhì*, is treated as the typical adverbial focus particle, which occurs a little bit higher than the ad-focus *lián* in the syntax. One of his sentences is given here to illustrate this point:

<i>Ākiù</i>	(<i>shènzhì</i>)	[<i>lián</i>	<i>nǎilào</i>] _i	*(<i>yě</i>)	<i>chī-guo</i>	<i>t_i</i>
Akiu	ADV _{EVEN}	AdFoc	cheese	SCAL _{MUCH}	eat-EXP	

‘Akiu eats even cheese.’

the scalar interpretation.⁶¹ Its role in a scalar context is to enforce the exhaustiveness of the possible alternatives denoted by the *wh* element. In a pure FCI context, the role of the *no matter* word can be regarded as an exhaustivity/maximality marker or an “FCI determiner” (Giannakidou and Cheng 2006), and only the distributive or maximality operator *dōu* can be used in this context. This analysis is spelled out in (59) and (60):⁶²

Scalar contexts:

- (59) \emptyset_{even} (wúlùn) SHÉI yě/dōu shuǐfú-bu-liǎo tā.
 AdFoc DET_{EXH} who YE/DOU not.be.able.to.persuade him
 ‘Even the person who is the best at persuading others cannot persuade him successfully.’

FCI contexts:

- (60) Wúlùn shéi dōu shuǐfú-bù-liǎo tā.
 DET_{EXH} who DOU not.be.able.to.persuade him
 ‘Nobody can persuade him successfully’

As is illustrated in (59) and (60), I am claiming that in sentences with scalar *yě* like (59), a \emptyset_{even} is always active (e.g., with the aid of negation/modals and other contextual elements) and the *no matter* word that enforces the exhaustivity is optional. Note that *dōu* in (59), which can interchange with scalar *yě*, should also be regarded as a scalar operator. In a pure FCI *no matter* context like illustrated in (60), the \emptyset_{even} is not activated (even though there is a negation or a modal in the sentence, like we saw in (60), (35) and (36)) and the *no matter* phrase providing the exhaustivity force agrees with the maximality *dōu* (e.g. in the form of Spec-head agreement). As a contrast to (59), *yě*, which always requires a scalar context, is not an alternative in this situation.

⁶¹ I argue that *no-matter* words in the sentence with the scalar *yě* play a role in excluding the question interpretation of *wh*-words and enforce the exhaustiveness reading.

⁶² Lin (1996) claims that all typical *dōu* should be treated as elliptical “wúlùn... dōu”. Cheng & Giannakidou (2006) believes that at least all FCI situations can be seen as “wúlùn... dōu”. I agree with this statement.

4.6.2 A piece of supporting evidence

The assumption of the existence of a null scalar ad-focus marker \emptyset_{even} can be evidenced by the following observation on the syntactic constraint of licensing *yě* in a *no-matter* sentence. In a simple *no-matter* sentence, only if *yě* can be used, the sentence can be transcribed as a *lián/even* sentence without changing other constituents in the sentence. Otherwise, *yě* cannot be used. For instance, the *no-matter* sentences in (61) and (62) can both be changed into a *lián/even* sentence by only replacing the *wh*-constituents:

- (61) a. *Nǐmen yǒuqián rén, nǎlǐ yě néng qù,*
 you rich people where YE can go
(nǐ yě dài wǒ qù ba.)
 you also take I go SFP
 ‘You rich people can go anywhere you want to. (Please also take me with you.)’
- b. *Nǐmen yǒuqián rén,*
 you rich people
lián zuì-guì-de dìfang yě néng qù.
 even most-expensive-ATTR place YE can go
 ‘You rich people can even go to the most expensive place.’
- (62) a. *Tā shénme yě bù shuō.*
 he what YE not say
 ‘He doesn’t say anything at all.’
- b. *Tā lián yí-ge-zì yě bù shuō.*
 he even one-CL-word YE not speak
 ‘He doesn’t say even one word.’

In contrast, sentence (63) cannot be rewritten into a proper *lián/even* sentence, as demonstrated below:

- (63) a. *Bùguǎn cóng shénme dìfang dōu/*yě kěyǐ shàng-qu.*
 no.matter from what place DOU/YE can ascend-go
 ‘You can ascend from any place.’
- b. **Lián cóng zuì-huá-de dìfang yě kěyǐ shàngqu.*
 even from most-slippery-ATTR place YE can ascend-go

The above test demonstrates the existence of a syntactic connection between the *bùguǎn/no-matter* sentence with the use of *yě* and its corresponding *lián/even* sentence. It also supports my claim that a null \emptyset_{even} exists in the *no matter* sentences with *yě*. In light of an obvious *even* element in all Mandarin *lián/even* sentences and *jíshǐ/even-if* sentences, an even bolder claim can be made:

- (64) An overt or covert ad-focus element expressing *even* exists in all sentences with a scalar use of *yě*.

4.6.3 The relation between additive *yě* and scalar *yě*

Meanwhile, although I have made a distinction between two different types of *yě*, I cannot deny that there are similarities between the two use types. It seems to me that the basic use of *yě*, namely “additivity”, still plays a role in scalar *yě* contexts. Just like basic *yě*, scalar *yě* also presupposes alternatives in the background; the difference is that the latter needs them to be ordered on a scale, plus, it needs one of the relevant alternatives to be one of the extremes on that scale. Consider the following example from Chen (2008):⁶³

- (65) *John lián dì-èr-tí dōu/*yě zuò-chūlai le.*
 John even problem 2 DOU/YE work-out PEF
Búguò tā méi zuò-chūlai líng-yí-dào.
 but he not work.out another-one-CL
 ‘John solved even problem 2, but he didn’t solve the other problem.’
 (Chen 2008: 75)

In a situation in which only two problems need to be solved, the continuation that *John did not solve the other problem* does not fit with the preceding *lián...yě* sentence. This shows that just like its additive use, the scalar *yě* also presupposes at least one (possible) alternative in the background. This presupposition, unlike that of additive *yě*, does not need to be verified by the preceding context, i.e., the alternatives in the contexts are possible alternatives rather than real or actual alternatives. However, the following sentence of the host sentence of the scalar *yě* cannot denote some proposition that goes against the presupposition. Like in (65), where the ‘possibility’ of the existence of alternatives is ruled out, so the sentence is not good.

Therefore, the difference between the basic *yě* and the parametric/scalar *yě* lies in the relation between the added proposition and the alternative(s) in

⁶³ Chen (2008) basically claims that *dōu* is scalar and that *yě* only denotes existentiality.

the domain. Different from its additive use, scalar *yě* enforces a hierarchy between the added proposition and alternatives. See the contrast in (66) and (67):

- (66) *Zhè-ge Zhōngguó-rén chī miànbāo,*
 this-CL Chinese-person eat bread
yě chī nǎilào.
 YE eat cheese
 ‘This Chinese person eats bread and also eats cheese.’

- (67) *Zhè-ge Zhōngguó-rén chī miànbāo, lián nǎilào yě chī.*
 this-CL Chinese-person eat bread even cheese YE eat.
 ‘This Chinese person not only eats bread, he even eats **CHEESE!**’

In (66) with a basic *yě*, “cheese” is simply another kind of food that he eats. The two propositions “eating bread” and “eating cheese” have no scalar relation to each other. In (67) with the scalar *yě* and *lián*, the asserted proposition “eating cheese” not only is the added information but also forms a hierarchical relation with the preceding alternative “eating bread”. In addition, “cheese” is believed to be the most unlikely thing for this (or any!) Chinese person to eat. Thus, it is put at the lowest extreme on the scale of the likelihood of “this Chinese person eats x” and “bread” is located higher than “cheese” on this scale. *Lián* is used to introduce the extremity, and *yě* relates extremity to the alternative(s) in the context and orders these alternatives on a scale. This means that both basic *yě* and parametric *yě* evoke alternatives. The difference is that with basic *yě* the alternatives are not hierarchically ordered, while with parametric *yě* they are.

A following speculation will be that both extremity and additivity are inherent components of *even*. However, some languages, such as English, do not have an overt morpheme to mark additivity. Others, however, use the additive particle itself to express *even*, such as Korean *-to* and Japanese *-mo*. One sentence in Japanese cited in Shyu (2016: 1387, in turn cited from Nakanishi 2006) is reproduced here as (68) to illustrate this.

- (68) *Hito-ri-mo ko-na-katta.*
 one-CL-also come-NEG-PAST
 ‘(lit.) Even one person didn’t come.’ = Nobody came.

In Mandarin, as an analytical language, we can have two explicit morphemes, namely *lián* and *yě*, to mark the two components of *even*.

4.7 Summary

Reviewing the distribution of parametric *yě*, I have argued that different from its basic additive counterpart, parametric *yě* requires a scalar context with an explicit extreme on the scale. I have demonstrated that when no scalarity is marked in any way, such as in a *no matter* context with a pure FC reading, *yě* cannot be used. In contrast, when an inherent scalar phrase such as *even* or a minimizer occurs in the sentence, the use of parametric *yě* is possible. I have also argued that negation and modality plays a role in providing scalarity in *no matter* contexts, and together with contextual elements that assist in anchoring the extremity of the scale, the use of parametric *yě* can be licensed in *no matter* contexts. I have said little about *dōu*, but its distribution suggests that, unlike *yě*, scalarity may not be the crucial element for its licensing.

In addition, with respect to *lián... yě* sentences, I have proposed that the role of *lián* is to introduce the extremity and *yě* relates the extremity to the alternatives. This can account for the fact that *lián* cannot co-occur with non-referential *wh*-words in *no matter* contexts, whereas it can appear before the referential *wh*-word in episodic contexts. In line with Hole (2017), I agree that, in its parametric use, *yě* is the head of a scalarity phrase. And a null \emptyset_{even} exists in the *no matter* sentences with *yě*. Furthermore, I have also argued that the additive meaning still exists in the scalar use of *yě* in the sense that a specific alternative, i.e., an extreme on the scale, is required to license scalar *yě*. Although both basic *yě* and parametric *yě* evoke alternatives, with scalar *yě* the alternatives are hierarchically ordered, while with basic *yě* they are not.

Since we have established two different interpretations for additive *yě* and parametric *yě*, we can officially label the projection of higher *yě* as Scal(ar)P. Now we have two *yě*s in the revised tree structure in (69).⁶⁴

⁶⁴ Some data seem to go against the conclusion that the scalar *yě* is base-generated in such a high position in the CP, much higher than the additive counterpart. The following ellipsis data, brought to my attention by Huba Bartos (p.c.), are a case in point:

(i) A: *Wǒ lián yí-jù huà yě méi shuō.*
 I even one-cl speech YE not speak
 ‘I didn’t even say a word.’

B1: *Wǒ yě méiyǒu.*
 I YE not
 ‘Nor did I’

B2: *Wǒ yě shì.*
 I YE am
 ‘So am I.’

As shown here, there are two possible elliptical answers to the question in (i A), one with the negation adverb *méiyǒu* in (B1) and the other containing the copular verb *shì* in (B2). Note that the additive *yě* is used overtly in both answers. Depending on the analysis of these elliptical answers, they may show that additive *yě* occupies a position higher than scalar *yě*. Since ellipsis is a hotly debated topic in Chinese linguistics and I cannot review of do justice to it here, I cannot go into this matter too deeply and only make a few short remarks.

When we reconstruct the ellipsis site content, we observe something contradictory with regard to the locus of scalar *yě*, as is demonstrated below. The elided constituents are reconstructed and indicated by Δ :

- (ii) B1: *Wǒ* [Δ *lián yí-jù huà yě^{scalar}*] *yě^{additive} méiyǒu* [Δ *shuō*].
 B2: *Wǒ yě^{additive} shì* [Δ *lián yí-jù huà yě^{scalar} méi shuō*].

In (ii B1), there are two ellipsis sites and the whole *lián* constituent and scalar *yě* would still be placed before the additive *yě*, which is consistent with the hierarchy given in (69). However, it seems that the reconstructed scalar *yě* in (ii B2) is structurally lower than the additive one, which goes against the conclusions we have drawn so far. aside from this, these data are also interesting because, as in my survey, the two *yě*s in general cannot occur in a single clause.

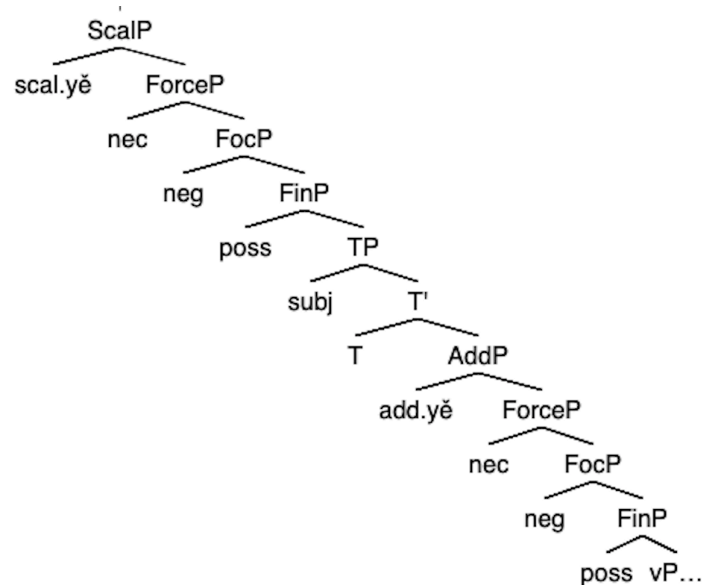
It is, however, not clear how to analyse *shì* in elliptical sentences, especially with respect to its relation with the rest of the sentence. In any case, according to Soh (2007), the *shì* in sentences like these selects a Pol(arity)P, rather than, say, a vP. In other words, it is possible that *shì* in (ii B2) introduce another clause (a CP or a TP), in which case the two *yě*s appear in different clauses. If this is correct, no conclusions on their relative hierarchical position can be drawn. Note, by the way, that in contrast to (ii B1), after the elided constituents have been reconstructed, (ii B2), with *shì* and two different *yě*s, is a grammatical sentence. However, when *shì* is absent, the sentence is no longer acceptable anymore.

- (iii) a. *Wǒ yě shì lián yí-jù huà yě méi shuō.*
 I YE am even one-CL speech YE not speak
 ‘I didn’t even say a word either.’

b. * *Wǒ yě lián yí-jù huà yě méi shuō.*

Obviously, more research is needed to account for this incompatibility, and for the data in this footnote more generally.

(69)



The ScalP is thus within the scope of CP. My placement of the ScalP in the structure can be well mapped to Li (2006)'s hierarchy of the functional projections in C-domain in Chinese and it roughly corresponds to the DegreeP headed by a sentence-final particle *ba* or *ma*, which scales on sentence force according to her (Li 2006: 35-36).⁶⁵ This is in fact a very interesting point of agreement. Meanwhile, the CP hypothesis of scalar *yě* is also in alignment with Greenberg's (2019) proposal that a scalar particle like *even* is in fact an "evaluative particle" with a scalar presupposition that indicates a degree which is higher than the salient standard. An evaluative adverb is quite high in the hierarchy, at least according to Cinque (1999). In the hierarchy obtained by Li (2006: 65), the functional projection of "EvaluativeP" is a bit lower than the ForceP, but still quite high in the CP. Therefore, this strengthens our claim that scalar *yě* is within the CP domain. Meanwhile, the sense of "evaluation" is often connected to the function of a modal particle. Interestingly, it has been observed that Mandarin *yě* also has a modal use. In the following chapter I will discuss this modal use of *yě*.

⁶⁵ Based on a survey of final particles in Mandarin, Cantonese and Weizhou dialect, Li (2006) proposed the following structure of C-domain in Chinese:

Epist₁ < Evid < Epist₂ < Disc < Force < Eval < Mood < Deik < Foc < Fin

Chapter 5 The modal use of *yě*

So far, I have presented two different uses of *yě*, namely, the additive use and the scalar use. We have seen that they do not only differ in interpretation, but also occupy different syntactic positions. The scalar *yě*, in CP, is interpreted with a clausal/propositional reading and the additive *yě* occupies a position in IP. In Chapter 1, I also mentioned another use type of *yě*, i.e., the modal use of *yě*. In this chapter, the modal use of *yě* will be discussed in detail. Before that, I will briefly introduce the general characteristics of *yě* as a modal particle.

5.1 *Yě* as a Modal Particle

Cross-linguistically, modal particles demonstrate a “multiple class-membership” property and they are considered to be polyfunctional (König 1991: 173). In other words, in some contexts, these particles usually don’t serve as modal particles. Instead, they are adverbs, focus particles, conjunctions and so on. German *auch* and Dutch *ook* are good candidates to show the polyfunctional feature. They serve as additive focus particles in some contexts, while they are also found to be used as modal particles in other contexts. Klooster (2001: 169-170) argues that sometimes Dutch *ook* ‘also’ can make a request sound politer and more modest without adding more information. In other words, the additive meaning of *ook* ‘also’ seems not be present in these contexts; one example is presented here as (1):

- (1) *Is Wim ook thuis?*
 is Wim also home
 ‘Is Wim at home?’

Interpretation: I would like to see Wim if he is home.

(Klooster 2001: 169)

Different from the additive use of *ook*, the contribution of *ook* in (1) is not to suggest that someone other than Wim is at home, rather, it is used to make a polite request. For the same reason, as Klooster reports, a police officer will never request the name of a suspect with an *ook* without sounding sarcastic, saying *Mag ik uw naam ook weten?* ‘May I maybe know your name?’. Furthermore, *ook* can never be stressed in this context.

The German additive particle *auch* can also be used as a modal particle, as is shown in (2):

(2) A: *Peter sieht schlecht aus.*
 Peter looks bad out
 ‘Peter Looks bad.’

B: *Er war auch sehr lange krank gewesen.*
 he was auch very long ill been.
 ‘(It is because) He has been ill for a long time.’
 (Karagjosova 2004: 226)

According to Karagjosova (2004), German *auch* in (2B) is applied to indicate that the speaker acknowledges that he has known the fact expressed by the utterance of A and he can also provide an explanation for the proposition conveyed by the previous speaker. Therefore, *auch* signals and makes it explicit that there is “an inferential relation” between the two utterances by A and B (Karagjosova 2004: 227). Like the Dutch *ook* in (1), in contrast to its additive use, German *auch* in (2) does not require an explicit antecedent nor suggests an alternative proposition that someone else has also been ill for a long time. Furthermore, the modal use of German *auch* cannot be stressed either. From the German and Dutch cases, we may speculate that the modal use of an additive particle is not a language-specific phenomenon.

Likewise, it has been noted that Mandarin *yě* has a modal use too (Ma 1982, Hou 1998, Lu 1999, Liu 2001, Lü. etc. 2010, Hole 2004). It can be illustrated by (3), which is repeated from chapter 1.

(3) *Nǐ yě tài jiāoqì le,*
 you YE too squeamish SFP
shuō nǐ liǎng-jù jiù kū.
 criticize you two-CL then cry
 ‘You are too squeamish. You cried simply because I made few comments on you.’
 (Liu 2001: 246)

Comparing the use of *yě* in (3) to its Dutch and German counterparts, at least two features are common: firstly, concerning its licensing condition, the use of *yě* in (3) also does not require an explicit antecedent in the discourse. This forms a contrast to the additive *yě* discussed in chapter 2. Plus, different from the additive use of *yě* which should always have a direct counterpart in the translation, in the translation of (3), *yě* (i.e., *also*) is not spelled out.⁶⁶ Secondly,

⁶⁶ Speakers of Dutch tell me that in a Dutch translation, it would appear, as *ook*: ‘*Je bent ook zo overgevoelig, één woord en je huilt al.*’ Later I will show that almost all sentences with a modal use of Mandarin *yě* can be paraphrased by a Dutch sentence with *ook*.

considering the prosodic feature, modal *yě* can never be stressed. For instance, if *yě* in (3) bears stress, it can only denote the ‘also’ meaning. This unstressability is shared with the scalar use of *yě*. Furthermore, there is a great potential that the actual tone of *yě* in (3) is a neutral tone and hence its Pinyin transcription should be *ye* instead of *yě*. This is exemplified by the following sentence drawn from a popular Chinese situation comedy “*Wǒ ài wǒ jiā*” (‘I love my family’):⁶⁷

- (4) *Nín ye děi zhùyì shēntǐ ya.*
 You YE have.to take.care body SFP
 ‘You have to take care your health in any case.’
 (Episode 1-part 1: 6:13)

The neutral tone is regarded as a “fully-fledged tone” and forms minimal contrasts with other tones in Mandarin. It has been documented that Mandarin functional words, e.g., particles expressing aspect or sentence final particles, are often associated with a neutral tone. A neutral tone is always unstressed (Wiedenhof 2015: 19-21). The prosodic feature, i.e., the unstressability and even a possible neutral tone, suggests that the modal use is different from its additive counterpart. The reduced neutral tone form *ye* is different from stressed and unstressed *yě* and may be the result of grammaticalization; cf. Wiedenhof’s (2015: 254) discussion of the reduced neutral-tone form *yī* ‘a, a certain’ from *yī* ‘one’. This assumption is in line with the claim made in the literature that the meaning of a modal particle can be traced back to the meaning of its other uses (Helbig 1988, Weydt 1969, Abraham 1991, Karagjosova 2004) and the modal use of some functional words, e.g. the focus particles, is the result of a process of grammaticalization (König 1991: 174).

Then what is the function of the modal use of *yě*? It has been argued by many that modal particles do not have a lexical or compositional meaning (Hentschel and Weydt 1989, Bayer 1991, Zeevat 2002, Karagjosova 2004: 24) or only have “bleached” semantics (Abraham 1991: 12). This seems to be the case in Mandarin as well. *Yě* as a modal particle in (3) and (4) can be omitted without affecting the truth conditions or the grammaticality of the host sentence (in which it also differs from both the additive and the scalar *yě*). The function of a modal particle involves the speaker’s attitude, belief or evaluation of the proposition; for instance, it is argued that a modal particle is used in a sentence to express “epistemic attitudes” of the speaker or the hearer (Doherty 1987) or the “propositional attitude” (Karagjosova 2004: 23) of the

⁶⁷ A YouTube video link for this episode: <https://youtu.be/E2qfVHKSize?t=372>

speaker. Therefore, a modal particle is assumed to modify the whole clause. For instance, the German particle *ja* is claimed to suggest a positive epistemic evaluation of the proposition expressed by the sentence in which it occurs, as is shown below (König 1991: 177):

- (5) (Ich lasse dir den Vortritt.) Ich habe ja noch Zeit.
 I leave you the precedence I have JA still time
 ‘I will let you go first. I have got plenty of time.’

Similarly, the function of *yě* has to do with the speaker’s evaluation or attitude too. The modal use of *yě*, in sentences like (3) and (4) can make the utterance gentler and milder, while without *yě*, it would be too direct and not polite (Hou 1998: 620, Liu et al. 2001: 246, Lü et al. 2010: 597).

Moreover, modal particles are often assumed to have context-dependent communicative functions (Dittmann 1982, Helbig 1988, Karagjosova 2004:26). The multiple occurrence contexts often result in the claim that one modal particle can have many different functions depending on the context. Therefore, it is important to first identify the contexts in which a modal particle occurs and then distinguish contextual aspects from the function(s) of the modal particle itself.

In what follows, contexts in which the modal *yě* is used will be investigated and the pragmatic function of the modal *yě* in each context will be discussed in detail. We will determine whether the contribution of modal *yě* used in all these contexts reveals something a core function of the modal *yě*.

5.2 Contexts involving modal *yě*

Earlier on I mentioned that modal particles make no lexical or truth-conditional contribution to the host sentence. Instead they are assumed to express certain attitudes or beliefs of the speaker towards the proposition of their host sentences, or to signal some discourse relations, such as contrast relation and cause/inferential relation between the two adjacent sentences (Dittmann 1982, Karagjosova 2004). The motivation to use a modal particle is “the need to point out these beliefs” (Karagjosova 2004: 65). However, it appears that a single modal particle can occur in various contexts; as a case in point, Karagjosova identifies at least four types of contexts in which German *auch* can occur as a modal particle. As is noted by König (1991) and Karagjosova (2004), the fact a modal particle can occur in various contexts does not necessarily mean that the modal particle has a different function in each context. It is crucial to distinguish the contextual factors from the contribution of the modal particle itself. In fact, in line with König and

Karagjosova, I argue that Mandarin modal *yě*, like German *auch*, invariably indicates certain relations between the propositions expressed by its host sentence and other contextual propositions. Before further developing this argument, a detailed description of the contexts in which the modal *yě* may occur is necessary.

5.2.1 The modal *yě* in a “criticism” context

Hole (2004: 41) describes two contexts where the modal *yě* (the “emphatic” use of *yě* in his terms) is used. One is in utterances which express tactful criticism to the addressee; the other case involves the expression of “resignation or the fact that the speaker accepts the things the way they are.” The first case is illustrated by (6) to (8):

- (6) *Nǐ yě tài xiǎokàn rén le,*
 you YE too belittle person SFP
tā kě shì kēbān chūshēn.
 he in.fact is professional.training background
 ‘You’d rather not look down on him [lit. you look down on him too much]. After all, he has received professional training.’
 (Hou 1998: 620)
- (7) *Nǐ yě tài jiāoqì le,*
 you YE too squeamish SFP
shuō nǐ liǎng-jù jiù kū.
 say you two-CL then cry
 ‘You are too squeamish. You cry simply because I say something about you.’
 (repeated from (3): Liu 2001: 246)
- (8) *Xiànzài dézhòng le,*
 now pass (the civil service examination) PERF
lián lǎoshī dōu bú bài,
 even teacher DOU not call.on
zhè yě tài bù tōng rénqíng le.
 this YE too not understand human.feeling SFP
 ‘Now he has passed the civil service examination, but he even did not bother to call on his teacher. This is just too inhuman.’
 (Hou 1998: 620)

It is clear that the host sentences of *yě* in (6)-(8) denote criticism or dissatisfaction with the hearer (in (6) and (7)) or a third person in the

conversation (in (8)). Another contextual aspect common to the three sentences is that the criticism denoted by the host sentence of *yě* is followed immediately by a sentence which provides the reason why the speaker sends out the critical message. The same sentences in (6)-(8) would express the same sentiments without *yě*. Therefore, it is the contextual elements but *yě* that have to do with the criticism reading. Another observation is that all the three sentences involve the construction *tài...le* ‘too...’ which has an intensification effect. With this construction, the accusation or criticism is strengthened. Interestingly, if the construction *tài...le* ‘too...’ is dropped in the sentences above, the necessity of using the modal *yě* seems to also disappear. The pragmatic function of *yě* can hence be regarded as a neutralization or modification effect of the speech act expressed by the asserted sentence, i.e., a sharp or way too direct criticism or comment.

This neutralization or modification effect is relevant to the speaker’s evaluation or confidence level about the claim. It is a bit difficult to associate *yě* to the speaker’s evaluation due to the modal particle’s void lexical meaning per se. However, this relation can be evidenced by the fact that *yě* in contexts like (6)-(8) often co-occurs with, and can even be replaced by, the speaker-oriented adverb *wèimiǎn* ‘rather, kind of’. For instance, (6) can also be reproduced as (9):

- (9) *Nǐ wèimiǎn (yě) tài xiǎokàn rén le,*
 you kind.of YE too belittle person SFP
tā kě shì kēbān chūshēn.
 he in.fact is professional.training family.background
 ‘You’d rather not look down on him [lit. you look down on him too much]. After all, he has received professional training.’
 (Hou 1998: 620)

Wèimiǎn ‘rather, kind of’ is a speaker-oriented adverb and is often used in a sentence conveying the speaker’s negative evaluation or critical comments. In distribution, *wèimiǎn* ‘rather, kind of’ often co-occurs with the construction *tài...le* ‘too’ or *guòyú* ‘excessively’ which are used to intensify the degree of criticism (Gu 2005). Using *wèimiǎn* ‘rather, kind of’ can add a very strong “subjectivity” flavor to the statement (Zhou 2011: 38). When the adverb expressing subjectivity is used, the following proposition is often regarded to be related to the speaker’s subjective attitude or evaluation (Benveniste 1972: 228-229). In effect, the proposition with *wèimiǎn* ‘rather, kind of’ is epistemically weaker than the proposition without it. In other words, the “subjectivity” flavor weakens the absoluteness of the claim and allows room for compromise. As I mentioned, *wèimiǎn* ‘rather, kind of’ and *yě* in contexts like (6)-(8) are interchangeable. I therefore argue that the role of the modal *yě*

in the above sentences, in parallel with *wèimiǎn* ‘rather, kind of’, is relevant to the speaker’s attitude and evaluation about the confidence level of his claim. Adding the modal *yě*, due to its subjectivity flavor, seems to make this strong accusation milder and leave some space for negotiation and doubt.

Although I have determined the pragmatic function of the modal *yě* in this context, it is still not clear what mechanism is operative behind it all. Or, put it in another way, why does *yě* have this effect? Below I will argue that this moderation effect can be attributed to the fact that the use of *yě* triggers common knowledge or contextual assumption of the existence of an alternative proposition different from the speaker’s criticism. For instance, the use of *yě* in (7) implies the existence of a presupposition that, under certain circumstances, crying is not taken as a squeamish act (we will come back to this point in 5.2). The contextual alternative to some degree rebuts the current critical claim and thus adds a concessive flavor to the discourse. By using the modal *yě*, the speaker acknowledges the existence of this contextual alternative.

5.2.2 The modal *yě* in an “acceptance” context

According to Hole (2004), modal *yě* can also be used in a context to acknowledge or accept the fact with a feeling of resignation or reluctance. Consider (10) to (12) (from Hou 1998: 620):

- (10) *Nà-jiàn shì yě jiù suàn-le,*
 that-CL thing YE then let.it.pass
nǐ búbì zǒng guà zài-xīn-shang.
 you no.need always hang at-heart-on
 ‘Let’s just let that thing pass. You don’t need to always put it in mind.’
- (11) *Zhè diànshì yòng-le bā-nián le,*
 this TV use-PERF eight-year SFP
túxiàng néng tiáo-chéng zhèyang,
 image can adjust-become so
yě jiù hěn búcuò le.
 YE then very not.bad SFP
 ‘This TV has been in use for eight years. That we can adjust its image to this level is not bad at all.’

- (12) *Yuánlái, wǒ zài biérén-de yǎn-zhōng,*
 originally I at others-ATTR eye-inside
fēnliàng bǐ yí-ge yuánzǐ hái qīng.
 weight compare one-CL atom even light
Yě nánguài, nà shì lǐgōng-de niándài,
 YE difficult.blame that is science.engineering-ATTR time
liúxué-de niándài, yīshēng-de niándài.
 study.abroad-ATTR time doctor-ATTR time
 ‘So, I am even lighter than an atom in others’ eyes. Nevertheless, it is
 pardonable. (That is because) this is a time for people who study science
 and engineering, who study abroad and who are doctors.’

The sentences above all imply that the speaker simply accepts the current state of affairs in spite of the fact that it is not very satisfactory. In particular, the phrase *yě nánguài* ‘it is hard to blame anyone’ in (12) is a fixed expression in the sense that the two elements within the phrase always cooccur.⁶⁸ The phrase is used to express a certain kind of understanding or acknowledgement of some embarrassing or unpleasant situation and is often followed or preceded by a sentence which explains the situation. In this sense, this context is similar to the first context. Again, the “acceptance” sense in all above sentences has nothing to do with *yě* itself.

In Mandarin, the modal *yě* also occurs in a few other fixed expressions, e.g., *yěbà* and *yěhǎo*.⁶⁹ These expressions denote the meaning of “reluctantly accepting the way it is”, as is illustrated in (13) and (14):

⁶⁸ More examples of *yě nánguài* ‘it is hard to blame anyone’ can be found in Lü et al. (2010: 408). It is also important to distinguish this predicative use of *nánguài* in (11) from the adverbial use (translated as ‘no wonder’) of the same word which is always used when introducing a sentence expressing a truth or fact.

⁶⁹ There is also a conjunctive use of *yěbà* and *yěhǎo*, which denotes a free-choice reading like ‘either...or...’, which can also be classified as an additive use. One example is demonstrated below:

Dìdi qù yě bà, mèimei qù yě bà,
 Younger.brother go also fine younger.sister go also fine
dōu děi yǒu rén zài-jīa kàn-zhe lǎolao.
 all must have person at-home see-PROG grandmother
 ‘Either the younger brother or the younger sister can go there. But anyway, we
 must have someone left to take care of the grandmother.’
 (Hou 1998: 621)

- (13) *Bú huì lā bǎnchē yěbà,*
 not can pull handcart also.fine
néng kàn diǎnr shū zǒngshì hǎo de.
 be.able.to read little book always good ATTR
 ‘Well, I have to accept the fact that you cannot pull the handcart. (After all,) doing some reading is always good.’
 (Hou 1998: 621)
- (14) *Yěhǎo, bú duì yěbà. Wǒ wèn nǐ,*
 Well not respond also.fine I ask you
shì Huánghé qīng róngyì ne,
 is Yellow.River clean easy SFP
háishì guānlì qīng róngyì?
 or government.officials clean easy
 ‘Well, it is okay if you do not want to respond. But let me ask you: what is easier, for the Yellow River to become clean or the officials to be not corrupted?’
 (Hou 1998: 622)

As is shown in (13) and (14), *yěbà* and *yěhǎo* are used in the beginning or at the end of sentences expressing an unsatisfying fact. By using *yěbà* and *yěhǎo*, the speaker conveys an attitude of resignation. Therefore, the context of (13) and (14) is similar to that of (10)-(12). In this context, the sense of “acceptance” can be derived from other lexical elements in the sentence rather than *yě*, for instance, *hǎo* ‘good’, *bà* ‘end’, *suàn-le* ‘forget it’ and so on. Indeed, the adverb *jiù* ‘then’ in (10) and (11) can be used to express a firm or determined tone (Liu 2001: 252). Therefore, the contribution of the modal *yě* is only to add a reluctance or resignation reading to the acceptance.

The reluctance attitude expressed by the host sentence of modal *yě* results from the speaker’s evaluation about the current not very satisfactory situation. It also signals that the speaker is as well aware of the possible alternative, i.e., the ideal situation. Be that as it may, for now at least, the speaker has to accept the status quo. Therefore, the pragmatic function of *yě* is to “neutralize” the acceptance expressed by the current proposition. In order to do this, the use of modal *yě* triggers an assumption that the speaker may expect something different or something more ideal, i.e., an alternative.

5.2.3 The modal *yě* in a “denial” context

In addition to two contexts mentioned in the previous sections, another context should also be mentioned, which is illustrated by (15) to (18):

- (15) *Yě bù néng quán yuàn tā,*
 YE not be.able.to completely blame her
yàoshi wǒ yě gēn-zhe qù
 if I also follow-PROG go
xīngxǔ jiù bú zhìyú zhèyang le.
 perhaps then not to.such.an.extent.as.to so SFP
 ‘It is in fact not all her fault. If I went together with her, things
 might not be like this.’ (Hou 1998: 620)
- (16) *Zhè-jiàn shì yě bù néng quán guài tā,*
 this-CL thing YE not be.able.to completely blame him
zhǔyào shì wǒ zuò de bù duì.
 mainly is I do DE not correct
 ‘We can’t blame this entirely on him. It is mainly due to my fault.’
 (Liu 2001: 246)
- (17) *Wǒ yě méi chī shénme bù gānjìng-de,*
 I YE not eat what not clean-ATTR
zěnmē huì shíwù zhōngdú ne?
 how be.possible food poisoning SFP
 ‘I did not eat anything that was not clean. How is it possible to suffer
 from food poisoning?’
- (18) *Zhè-duàn huà nǐ zhèyàng lǐjiě yě bú*
 This-paragraph words you like.this understand YE not
suàn cuò, yǐqián yě yǒu rén zhèyang
 count wrong previously YE have person so
jiěshì-guo, búguò duōshù-rén dōu bú zhème kàn.
 explain-EXP but majority-people all not so see
 ‘It is in fact not wrong to understand this paragraph in this way. Others
 have surely explained it the same way in the past, but most people don’t
 interpret it this way.’
 (Hou 1998: 620)

In these sentences, the modal *yě* is used in a clause which serves as a denial to people’s expectations or assumptions. For instance, (15) presupposes that people would blame ‘her’ for the difficult situation that they are faced with.

However, the speaker denies the presupposition by uttering the clause with *yě*. Similarly, because the speaker of (17) is suffering from food poisoning, the assumption (based on common sense) is that the speaker may have eaten something bad. However, the speaker denies this assumption. In this context, the denial is realized by the negation adverb *bù* ‘not’ and the denied presupposition can be derived from the context or common sense. Note that this contextual assumption is in fact overtly pronounced by the following sentence in (18). In other words, both the current proposition expressing denial and the presupposed alternative can be derived by elements other than *yě*. Then we may wonder: what exactly is the role of *yě* in this context? It seems that the modal *yě* here is used to send a clear signal that the speaker has acknowledged the presupposition or the assumption of the hearer, even though he has an adversative opinion. This acknowledgement act is by no means trivial, in the sense that this contextual alternative can only be activated and included in the discourse at work by acknowledging it. And the process of acknowledgement is naturally involved with the speaker’s judgement and weighing between the two alternatives. Marking explicitly the acknowledgement of an adversative expectation by the modal *yě*, the speaker leaves room for further discussion by denying the expectation.

So far, I have examined three contexts where the modal *yě* is used. Crucially, I separated the contextual aspects from the contribution of the modal word itself. A brief summary is demonstrated in (19).

(19) The function of the modal *yě* in different contexts

Utterance meaning of the host sentence without <i>yě</i>	Pragmatic function of the modal <i>yě</i>	Contribution of the modal <i>yě</i> to the utterance
(1) Expressing criticism or dissatisfaction	-Softening the tone of the criticism -adding a subjectivity flavor to the statement	-Triggering a background assumption which is contrary to the current proposition
(2) Expressing acceptance of the current state of affairs	-Adding a compromising or reluctant flavor to the acceptance	-Signaling the existence of an alternative, e.g., a more ideal situation
(3) Expressing a denial to people’s expectations	-Leaving room for further discussion of a denial	-Marking the acknowledgement of an adversative expectation of the hearer or a presupposition in the context

Interestingly, as an aside, all the Mandarin sentences with a modality *yě* can indeed be translated into Dutch equivalent sentences with *ook*, as is indicated in the following examples:⁷⁰

Context 1:

- (20) *Je moet ook niet zo op hem neerkijken,*
 you must OOK not so on him look.down
hij is wel /eigenlijk een professional, hoor.
 he is well/indeed one professional SFP
 ‘You’d rather not look down on him. After all, he has received
 professional training.’ (cf. (5))

Context 2:

- (21) *Deze zaak is nu ook wel klaar, je hoeft*
 this thing is now OOK well ready you need
je er niet altijd zorgen over te maken.
 you it not always care over to make
 ‘Let’s just let this thing pass. You don’t need to always worry about it.’
 (cf. (9))

Context 3:

- (22) *We kunnen haar ook niet helemaal de schuld*
 we can her OOK not all the fault
geven, als ik met haar mee was gegaan had de
 give if I with her with was gone was the
situatie anders kunnen zijn.
 situation different can be
 ‘It is in fact not all her fault. If I went there together with her, things
 could have turned out differently.’
 (cf. (14))

The similarities between Dutch *ook* and Mandarin *yě* confirm some universal value of this current research.

In what follows, the mechanism behind the contextual functions of modal *yě* will be discussed and I will argue that in all contexts, modal *yě* invariably indicates a concessive relation.

⁷⁰ The translated Dutch sentences are provided by Jeroen Wiedenhof.

5.3 The modal *yě* as a concessivity marker

It is clear from the table in (19) that the interpretation or the pragmatic role of modal *yě* shows context-dependence. However, concerning *yě*'s contribution to the meaning of an utterance, there is something context-independent: by using *yě*, the propositions in different contexts are all somehow connected with an existing expectation or a contextual assumption, i.e., an alternative proposition to the current one. It sheds some light on a possible “minimalist” approach to a unified account for the function of the modal *yě* in different contexts in line with some literature on the modal use of German *auch* (Dittmann 1982, Deherty 1987, König 1991, Karagjosova 2004). For instance, it has been proposed that the German modal particle *auch* is used to indicate an “inferential relation” between the proposition with *auch* and an existing assumption or a preceding proposition in the context (König 1991: 184, Karagjosova 2004: 234). The utterance where *auch* occurs can be taken as a “precondition”, “cause” or “reason” for the existing assumption, as is shown in (23):

- (23) A: *Sie haben vortreffliche Arbeit geleistet.*
 YOU.HONORIFIC have excellent job performed
 ‘You have done an excellent job.’
- B: *Ich habe auch Tag und Nacht geschuftet.*
 I have also day and night toiled
 ‘I have slaved away day and night.’
 (König 1991: 184)

Along with them, I would like to argue that the modal use of Mandarin *yě* indicates some relation between the utterance with *yě* and the contextual alternative. However, this relation may not be “inferential”. It is obvious from the above examples that the sentence with *yě* often expresses the speakers’ attitude such as criticism or acceptance based on some reasons. The propositions expressed by the host sentences are not used as a certain “precondition” or “cause” for this attitude. Instead, I propose that the modal *yě* marks a concessive relation between the contextual proposition and the proposition expressed by the host sentence.⁷¹ This proposal is supported by

⁷¹ Di Meola (1998) claims a close link between the concessive relation and causal (inferential) relation, i.e., concessivity is a “hidden causality”. König (1991) and König and Siemund (2000: 341-360) argue for an opposition between causal relation and concessive relation. The difference is similar to the presupposition of the causal and concessive constructions, i.e., the former presupposes “ $p \rightarrow q$ ” and the latter presupposes “ $p \rightarrow \neg q$ ”.

the fact that, if the contextual proposition is spelled out by a subordinate clause, all the Mandarin cases above can be rewritten into complex sentences connected by a conjunction expressing concessivity, e.g., *jīshǐ* ‘even if’ or *suīrán* ‘although’. This can be exemplified by the following sentences selected from each context mentioned above:

(24) *Jīshǐ/suīrán* *hěnduō rén* *shòudào yánlì*
 even.if/although many people suffer sharp
pīpíng *shí* *huì kū*, *nǐ yě* *tài jiāoqì* *le*.
 criticism when will cry you YE too squeamish SFP
 ‘Even if/ although many people will cry when they suffer from sharp criticism, you are a little bit too squeamish.’

(25) *Jīshǐ/suīrán* *wǒ rènwéi* *yīnggāi* *gèng* *yánsù*
 even.if/although I think should more serious
duìdài, *nà-jiàn* *shìqìng* *yě* *jiù suàn-le* *ba*.
 treat that-CL thing YE then let.it.pass SFP
 ‘Even if/although I believe that we should treat this thing more seriously, let’s just let it pass.’

(26) *Jīshǐ/suīrán* *dàduōshù rén* *bú zhème kàn*,
 even if/ although most people not so see
nǐ zhème *lǐjiě* *yě bú suàn* *cuò*.
 you so understand YE not count wrong
 ‘Even if/although most people don’t think like this, it is not wrong that you do.’

The paraphrase relations between (24)-(26) with an overt concessive construction and the corresponding sentences with modal *yě* (respectively, (7), (10) and (17)) support my claim that modal *yě* indicates a concessive relation.

In light of the common ground between sentences with an overt concessive construction and sentences with a modal *yě*, a suggestion that is comes up immediately is that the *yě*s in the two cases are of the same type. This does not refute my proposal that modal *yě* is a concessivity marker. We can subsume the use of *yě* in the complex sentence with an overt concessive subordinate clause under the modal use of *yě*, even though, different from sentences with typical modal use of *yě*, the concessive presupposition is

explicitly spelled out in the concessive sentence.⁷² Therefore, *yě* in the following sentences with a concessive connective could also be viewed as an instantiation of modal *yě*.

- (27) *Suīrán méi xià-yǔ, tā yě dài-zhe sǎn.*
 although not fall-rain he YE take-PROG umbrella
 ‘He took along an umbrella although it wasn’t raining.’
 (Hou 1998: 619)

- (28) *Tā suīrán bù jìgè, yě bèi lùqǔ-le.*
 he although not pass YE PASS admit-PERF
 ‘He was admitted although he did not pass the exam.’
 (Hou 1998: 619)

- (29) *Rénshēn gùrán yǒu zībǔ zuòyòng,*
 Ginseng admittedly have nourishing function
yě bù yí duō chī.
 YE not suitable a.lot eat
 ‘Eating a lot of ginseng is not good for you although it has nourishing effect.’
 (Hou 1998: 619)

When the concessive alternative is explicitly expressed as in (27)-(29), a concessive conjunction is necessary to connect the two parts. Otherwise, a modal *yě* is sufficient to mark the concessivity.

⁷² The content expressed by the subordinate clause in the concessive construction is assumed to be presupposed (König and Siemund 2000: 345-346). It is supported by the (i), considering the fact that the subordinate clause is not affected by negating and questioning the main clause.

- (i) a. *Suīrán méi xià-yǔ, tā yě dài-zhe sǎn.*
 although not fall-rain he YE take-PROG umbrella
 ‘He took along an umbrella although it wasn’t raining.’
 (Hou 1998: 619)

- b. *Suīrán méi xià-yǔ, wǒ bú-rènwéi/huáiyí*
 although not fall-rain I not think/doubt
tā yě dài-zhe sǎn.
 he YE take-PROG umbrella
 ‘I don’t think/ I doubt that he would take along an umbrella although it wasn’t raining.’

As shown in (9), modal *yě* can be replaced by other adverbs. Likewise, *yě* in the concessive constructions is interchangeable with other adverbs as well, such as *réngrán/háishi* ‘still’.

However, different from the scalar context, *dōu* is strongly dispreferred in concessive contexts, consider (30) (Hole 2004: 228):

- (30) *Suīrán* *méi xià-yǔ*,
 although not fall-rain
*tā yě / *dōu* *dài-zhe* *sǎn*.
 he YE DOU take-PROG umbrella
 ‘He took along an umbrella although it wasn’t raining.’
 (Hole 2004: 228)

Moreover, as briefly discussed in chapter 4, *dōu* is also in general dispreferred in the concessive conditional constructions. One example is repeated here as (31):

- (31) *Jìshǐ* *guówáng lái*, *wǒ yě / *dōu* *bú qù*.
 even if king come I YE DOU not go
 ‘Even if the king comes, I won’t go.’
 (Hole 2004: 223)

It seems that concessivity is the factor that blocks the use of *dōu* in these contexts. I will not further explore the underlying reasons. However, it again shows the difference between the parametric uses of *dōu* and *yě*.

So far, we can conclude that the modal *yě* contextual independently indicates a concessive relation between the contextual proposition and the proposition of the host sentence. Furthermore, the use of *yě* in the main clause of a concessive sentence should also be regarded as a modal use.

5.4 Concluding remarks

In this chapter, three contexts in which the modal *yě* can be used have been examined in detail. Although modal *yě* plays a specific pragmatic role in different contexts, it invariably signals the existence of a contextual proposition as an alternative to the proposition expressed by its host sentence. I argue that *yě* invariably indicates a concessive relation between the two propositions. The concessivity has to do with the neutralization or degradation effect and leads to a polite, indirect, tactful or less absolute reading of the host sentence. We thus have a concise account, yet with explanatory power.

A following question is: does the modal *yě* differ from the other two *yě*s? We seem to have all reason to argue that the modal *yě* is different from the

additive *yě*. For instance, as a modal particle, it is assumed to associate with the whole clause and it does not require an explicit or verifiable antecedent. Additive *yě* and modal *yě* also differ in stress patterns, i.e., additive *yě* can be stressed, but modal *yě* cannot.

However, it seems to me that the modal *yě* marking concessivity is closely linked to scalar *yě*. A piece of evidence in favor of the link is that in English the word expressing “concessive conditional” meaning is *even if* in which the concessive component is realized by *even*, which is a scalar marker as discussed earlier. As to Mandarin, in both concessive conditional constructions (e.g., with *jíshǐ* ‘even if’, a scalar context as discussed earlier) and purely concessive constructions (e.g., with *sūirán* ‘although’), *yě* is preferred to *dōu*.

Meanwhile, the function of both scalar *yě* and modal *yě* involves the speaker’s attitude or evaluation. It is pointed out by Greenberg (2019), that a scalar particle can be regarded as an “evaluative particle” with a scalar presupposition that indicates a degree that is higher than the salient standard. Likewise, it is generally agreed that modal particles can express a certain kind of belief or propositional attitude of the speaker.

Moreover, it is reasonable to argue that sentences with a modal *yě* involve a scale. It is indeed not difficult to put the contextual proposition and the proposition of the host sentence of modal *yě* on a scale. Take (7) as one example. On a scale of “being squeamish”, the behavior that “crying due to some mild comments” is evaluated as a very high degree and less-likely occurs. The alternative background assumption that many people may cry when they encounter severe criticism is measured as a lower degree on the “being squeamish” scale. In short, the two alternative propositions are ordered hierarchically.

On the basis of the above evidence, we can establish a close connection between the modal *yě* and the scalar *yě*. A following speculation will be that they occupy the same structural position in the CP since modal particles are also claimed to modify the whole sentence (Karagjosova 2004:19).

One last thing that I would like to point out is that although modal *yě* is clearly interpreted with a sentential scope which patterns with scalar *yě*, it roughly occupies the same (linear) position as additive *yě*. More research is necessary to bring these contradictory findings (or mismatch) in line with each other, also because this has consequences for additive *yě*: if modal *yě* is free to occupy a low position while being interpreted high, why would that not be possible for additive *yě*? I will look into this question in future projects.

Chapter 6 Conclusion

This dissertation provides a study of the Mandarin particle *yě* and aims to answer the questions raised in Chapter 1: “Is there one *yě* or are there several *yě*s in Mandarin?” This question is explored via an analysis of three different usages of *yě*, namely, the additive use, the parametric/scalar use and the modal use. By surveying the syntactic positions (in Chapter 3) and examining the semantics/pragmatics (in Chapters 2, 4 and 5) of each use type, this dissertation has shown that there are at least two different *yě*s, namely, the additive/lower *yě* in the IP and the scalar/higher *yě* in the CP. Although the exact position of the modal use of *yě* is not explicitly determined in this study, we did find that it has a close connection to scalar *yě*. In light of the fact that both scalar *yě* and modal *yě* involves an evaluation or judgement of the speaker, they might occupy the same high position in the CP.

Although the dissertation has provided evidence to differentiate *yě*s in different contexts, I have found the following commonality: all three use types of *yě* invariably evoke alternatives in their respective occurrence contexts. However, both the mechanism activating these alternatives and the relation between the alternative proposition(s) and the proposition expressed by the host sentence are different. The difference should be attributed to the very nature of each *yě*. For instance, like a discourse anaphore, additive *yě* always requires a verifiable antecedent. Therefore, the alternative that additive *yě* triggers is either often explicitly mentioned in the preceding discourse or can easily be retraced within the active context, i.e., it is a real alternative. In contrast, scalar *yě* in the *no-matter* or *even* contexts evokes alternatives in the background and does not require the alternatives to be verifiable or explicitly mentioned. In other words, the alternatives evoked in the scalar contexts are not necessarily real alternatives, but possible alternatives. This observation also applies to the modal use of *yě*. The alternatives evoked by modal *yě* do not need to be explicitly mentioned either.

In addition, how the alternatives activated by the different *yě*s are ordered also varies. Regarding the additive use, I have argued in Chapter 2 that the host sentence and the antecedent must share something, namely, the identical argumentative orientation. Furthermore, the two (or more) propositions connected by the additive *yě* are not arranged on any scale, i.e., they are equal alternatives that share the same augmentative goal and orientation. This argument is supported by the existence of the *yě...yě...yě* pattern in Mandarin.

The alternatives denoted by the scalar *yě* is ordered in a different way. As discussed in Chapter 4, the possible alternatives are ordered on a scale provided by the context on which the degree is measured, e.g., the degree of

likelihood. The proposition expressed by the host sentence of *yě* points to the extreme of the scale.

Regarding the modal use of *yě*, I have argued that a concessive relation exists in all its occurrence contexts between the proposition conveyed by the host sentence and the contextual proposition, i.e., the possible alternative indicated by the context or common knowledge. Therefore, similar to the alternatives in the context of scalar *yě*, the alternatives in the context of modal *yě* are not equal either. These overall conclusions can help us to round off this research in some way. However, while discussing each use type of *yě* many more findings appeared. In what follows, I will present the readers with an overview of what I have done by summarizing the findings of each chapter.

6.1 Conclusions per chapter

In **Chapter 2**, I discussed the additive use of *yě*. Based on the basic notions of alternative semantics laid out by Rooth, I focus on the property typical for an additive particle, namely that it always presupposes the existence of alternatives in the discourse. I argued that an additive particle as a focus particle is a discourse-anaphoric element. For instance, it resists presupposition accommodation due to its lack of lexical meaning. Its interpretation always requires the preceding discourse and it always refers backwards. I further discussed the requirements of the antecedents of additive *yě*. Due to its anaphoric nature, a viable host sentence for additive *yě* always requires an antecedent which can be verifiable in the preceding context. The antecedent does not have to be explicitly mentioned but must be active in the preceding discourse. By the same token, I argued that the role played by the discourse in licensing the use of additive *yě* is crucial. In line with Winterstein (2009), I presented evidence to show that discourse similarity, more particularly, the same argumentative orientation between the antecedent and the host sentence, is the key to license the use of additive *yě*. This has provided a new account for using *yě* in sentences with two or more contrasting elements between the host sentence and the antecedent, in which the “one-distinction” rule is broken. Our account for the licensing condition of additive *yě* is simple and consistent: additive *yě* can only be used if the antecedent of additive *yě* can be retrieved from the context, i.e., it must be explicitly asserted or somehow mentioned in the active context, and it shares the same argumentative orientation towards the argumentative goal with the host sentence.

Besides its relation with the antecedent, in the **second part of Chapter 2**, the relation between additive *yě* and the constituents within the host sentence, i.e., the AC and ID, was also discussed. Along with Reis and Rosengren’s (1997) generalization on German AC/ID distribution patterns,

similar AC/ID patterns of Mandarin unstressed *yě* and stressed *yě* were demonstrated based on the results of my survey. The pattern is repeated here:

- (1) **AC/ID patterns of stressed *YE* and unstressed *yě***
 ([AC]_{CT}) (AC) (ID) *YE* ID (ID)
 (ID) *yě* [AC]_F (ID) (ID)

In addition to the complementary distribution of AC/ID pattern concerning sentences with unstressed *yě* and stressed *yě*, the relation between the AC and the additive particle was also discussed. In particular, I supported the “contrastive topic” treatment of the preceding AC before the stressed particle proposed by Krifka (1999). In spite of the differences observed between unstressed *yě* and stressed *yě*, a uniform analysis was adopted as to the meaning/function of the two variants. In other words, the “contrastive topic” associated with the stressed *yě* is also regarded as a focus constituent and establishes its relation with the stressed additive particle in the same way as that of the unstressed *yě*. This chapter also singled out the use of an unstressed *yě* with a preceding stressed AC and argued that this use type of *yě* is different from the normal additive use and should be treated as a parametric/scalar use type.

After establishing the semantics of additive *yě*, **Chapter 3** aims to determine the syntactic position of *yě*. Firstly, I presented evidence to prove that additive *yě* is an IP adverb: it occurs in a position lower than the outer subject, i.e., [Spec, IP], but higher than the inner subject, i.e., [Spec, vP]. In order to determine the exact position of additive *yě* in the IP, I introduced two diagnostics. The first is the modal hierarchy proposed by Butler (2003) and the second is the adverb hierarchy proposed by Cinque (1999). I proposed a new classification of Mandarin modals based on Butler (2003) and Lin (2012) and confirmed the rigid order between the modals with the results of my survey, as is repeated here:

- (2) Epistemic necessity < Negation < Epistemic possibility < (Strong) subject
 < Root necessity < Negation < Root possibility < vP

My first diagnostic tool is a survey of the relative position of additive *yě* in this modal hierarchy. I concluded that the position of additive *yě* is higher than the root necessity modals but lower than the subject, as is represented below:

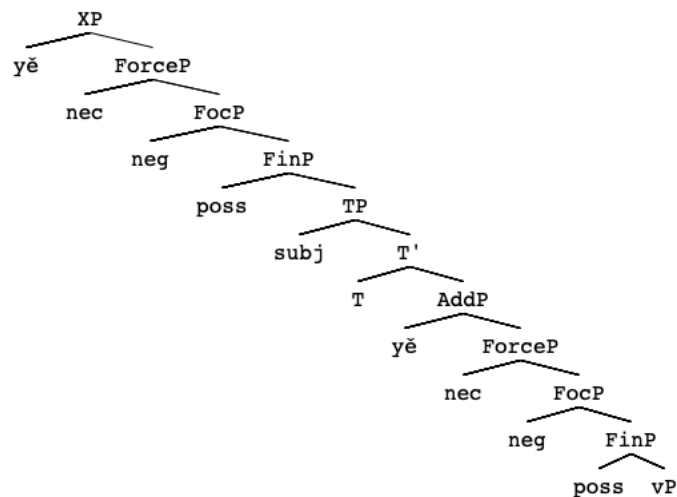
- (3) Epistemic necessity < Negation < Epistemic possibility < (Strong) subject
 < Additive *yě* < Root necessity < Negation < Root possibility < vP

My second diagnostic tool, the survey of the positioning of additive *yě* in Cinque's adverb hierarchy, leads to a similar conclusion. The resulting placement of additive *yě* is comparable to that in Butler's hierarchy of modals. In the IP zone it is higher than the adverbs or modals expressing necessity, as shown below:

- (4) [*lǎoshi-shuō* Mood_{speech-act} [*búxìng* Mood_{evaluative} [*xiǎnrán* Mood_{evidential} [*hǎoxiàng*. Mod_{epistemic} [*xiànzài* T [*yěxu* Mod_{irrealis} [*yě* Add [*bìrán* Mod_{necessity} [*yídìng* Mod_{possibility} [*míngzhì-de* Mod_{root} [*yìbān* Asp_{habitual} [*yòu* Asp_{repetitive} [*chángcháng* Asp_{frequentative} [*yíjīng* T (Anterior) [*bú-zài* Asp_{terminative} [*zǒngshì* Asp_{perfect} [*yìzhí/gānggāng* Asp_{retrospective} [*wánquán* Asp_{completive} [*hǎo* Voice (< V)

By using the same diagnostics, my investigations into the positioning of parametric *yě* lead to the conclusion that it is much higher than the additive *yě*, and presumably higher than the epistemic necessity modals and corresponding adverbs. In the end, I placed the two *yě*s in Butler's syntactic structure, as repeated below:

- (5)



According to Ernst (2007: 1011), the two adverbs licensed by distinct heads must have two distinct interpretations. After establishing two syntactic positions for *yě*, it is also important to demonstrate that they have different interpretations, that is to say, if the higher *yě* is not additive, then what interpretation does it get? This was the aim of Chapter 4.

In **Chapter 4**, I argued that parametric *yě* has a scalar nature. To this end, I demonstrated that *yě* can not be used in a pure FC context, such as a *no matter* context with a pure FC reading. It can only be licensed whenever scalarity is marked in the sentence. For instance, when an inherent scalar phrase such as *even* or a minimizer occurs, the use of *yě* is licensed. In addition, negation and modality may also contribute in providing scalarity and warranting the use of *yě*. Meanwhile, another licensing condition of parametric *yě* is the existence of the extreme of the provided scale in the sentence. Following this, I proposed that the function of *lián* is to introduce the extremity to which parametric *yě* can point. In the last part of Chapter 4, following with Hole's proposal, I argued that parametric *yě* is the head of a scalarity phrase and a null \emptyset_{even} exists in *no matter* sentences with *yě*. The relation between additive *yě* and scalar *yě* was also briefly discussed. In combination with the syntactic survey in Chapter 3, I argued that the ScalP headed by scalar *yě* is above the ForceP headed by an epistemic necessity modal in the CP. The position of scalar *yě* is so high that it may function as an “evaluative particle” according to Greenberg (2019). Interestingly, cross-linguistically, the particle expressing ‘also’ has been found with a modal use that is closely relevant to the speaker’s judgement or evaluation. Chapter 5 further discusses this modal use of *yě*.

Three different contexts in which modal *yě* can be used, i.e., the “criticism” context, the “acceptance” contexts and the “denial” context, were examined in **Chapter 5** in order to determine whether there are similarities regarding the use of *yě* in these contexts. By separating the contextual elements from the role of the modal particle itself, a common mechanism behind the various pragmatic roles has been established, that is, modal *yě* in all three contexts invariably denotes a concessive relation between a contextual proposition and the proposition expressed by its host sentence. Due to the nature of a concessivity marker, using *yě* in a sentence always presupposes the existence of a concessive proposition as an alternative and pragmatically results in a polite, indirect, tactful or less absolute reading of the host sentence. By the same token, I argued that *yě* in the sentences with an overt concessive conjunction should also be regarded as a modal particle. When comparing the modal use and the scalar use of *yě*, it became clear that there exists a close relationship between the two.

6.2 Remaining questions

Due to the fact that our focus in this dissertation is on the uses of *yě*, more specifically, the different use types of *yě* in modern Chinese, there are two questions that remain unanswered. The first one concerns the use of *dōu*, which is often regarded as an alternative to *yě* in some contexts. The second one concerns a diachronic study of *yě*. This last section of the dissertation is left for a brief discussion of these two questions.

6.2.1 Two hypotheses on *dōu*

The first unsolved question concerns the difference between *yě* and *dōu* in *no-matter* and *even* contexts. In Chapter 4, I have shown the reason that *yě* cannot be used in some *no-matter* contexts, i.e., due to the lack of scalarity. However, I did not address the question why *dōu*, which is regarded as a distributor (Lee 1986; Liu 1990; Lin 1998; Cheng 1991 and Cheng 1995) or a maximality operator (Giannakidou and Cheng 2006; Cheng 2009; Cheng and Giannakidou 2013), can be used in most scalar contexts, such as *lián* ‘even’ contexts. This short section has no intention to describe or define the nature of *dōu*. However, I will provide two tentative accounts for the possible use of *dōu* in scalar contexts.

One possible account is that *dōu* indeed has two different interpretations, i.e., as a scalar particle in scalar contexts expressing scalarity (e.g., in *even* contexts) and as a maximality/exhaustivity particle expressing exhaustivity in non-scalar contexts (e.g., in *no matter* contexts with a pure free-choice reading). Interestingly, the phenomenon that a particle can express exhaustivity in some contexts and scalarity in other contexts has been documented in recent literature. For instance, New and Erlewine (2018) discuss how the Burmese particle *hma* changes its interpretation from a non-scalar exhaustive particle to a scalar marker with the aid of other operators, e.g. in the scope of negation and a mood marker *dar* for propositional clefts like Mandarin *shì...de*.

Another possible account is that there is invariably one *dōu* in all contexts, which is a maximality operator in all *even* or *no matter* contexts. As a maximality marker, it requires a preceding element expressing exhaustiveness, for instance, motivated by spec-head agreement. Since there is always an overt or covert *wúlùn* ‘no matter’ which can enforce the exhaustiveness reading in all *no matter* contexts with a free-choice reading (as discussed by Lin (1996), Cheng and Giannakidou (2006)), the exhaustivity is syntactically marked by *wúlùn* ‘no matter’ and the use of *dōu* in these contexts can be relatively easily accounted for. The only problem is that *dōu* can also be used in a typical scalar context. One possible account is that exhaustiveness

is inherently denoted in all *lián* ‘even’ contexts. I have argued that the function of *lián* is to mark the extreme or maximal point of the scale. The exhaustive reading can be derived easily by relying on some pragmatic reasoning. It is in fact argued by Horn (1981:132-133) that exhaustivity, instead of being structurally encoded in some focusing or exhaustive listing constructions, like *it*-clefts, is pragmatically derived as a “generalized conversational implicature”. This pragmatic implicature-based account of exhaustivity can also be substantiated by Mandarin data. A generalized conversational implicature differs from an entailment in its defeasibility and reinforceability (Grice 1989; Chierchia and McConnell-Ginet 2000: 26-27). The exhaustive reading can in fact be defeated in either *no-matter* contexts or *even* contexts in Mandarin. Consider (6) and (7):

(6) *Shéi dōu néng shuō wǒ, jiù nǐ bù xíng.*
 who DOU can criticize I only you not allow
 ‘I can be criticized by anyone, but only not by you.’

(7) *Lián guówáng dōu/yě lái-le,*
 even king DOU/YE come-PEFR
kěshì nǐ què méi lái.
 but you yet not come
 ‘Even the king came, but you did not come.’

Meanwhile, the first part in (6) and (7) can also be reinforced without any flavor of the redundancy, as shown in (8) and (9).

(8) *Shéi dōu néng shuō wǒ,*
 who DOU can criticize I
nǐ dāngrán yě néng.
 you surely also can
 ‘I can be criticized by anyone, surely including you.’

(9) *Lián guówáng dōu/yě lái-le,*
 even king DOU/YE come-PEFR
gèng-bù-yòng-shuō tā.
 not.to.speak.of he
 ‘Even the king came, not to speak of him.’

The above diagnostics of defeasibility and reinforceability suggest that the exhaustivity in *no matter* contexts and *even* contexts can be pragmatically derived as an implicature. The licensing of *dōu* in these contexts is thus not a surprise due to its satisfaction of the exhaustivity requirement. Furthermore,

it also means that an exhaustivity determiner like *wúlùn* ‘no matter’, as a syntactic marker, is not always required, particularly in a scalar context. Provided that exhaustivity is inherently there and pragmatically activated in a scalar context such as the *lián* context, it is possible to assume that both *yě* and *dōu* can occur in a *lián* sentence; one agrees with scalarity and the other with exhaustivity. In fact, all native speakers that were consulted for this study accept the *lián*-sentences with a *yě* preceding *dōu*, as demonstrated in (10) and (11):

- (10) *Tā lián yí-jù-Héland-huà*
 (s)he even one-CL-Dutch-language
yě dōu bú huì.
 YE DOU not can
 ‘He doesn’t even know one Dutch sentence.’
- (11) *Lián guówáng yě dōu lái-le,*
 even king YE DOU come-PEFR
 ‘Even the king came.’

Following this account, we can assume that, in all scalar cases, there is always a *yě* even though it can be left out when a *dōu* is also there. Based on the linear order shown in (10) and (11), it seems that *yě* denoting scalarity is syntactically higher than *dōu* denoting maximality.

Both accounts discussed above are certainly in need of more support and more research. I will not take a stance here.

6.2.2 *Yě* in *Lao Ch’i-ta* and Classical Chinese: A diachronic study

This study has not gone into the historical development of the use of *yě*. However, an interesting observation made by Hole illuminates the importance of a comprehensive diachronic study. Hole (2014) observes the similarity between Manchu and Mandarin in how ‘even’ is expressed, as illustrated by (12) and (13) (Hole 2014: 292):

- (12) **Manchu:**
Ter-ei toumen de EMGERI be inou
 this-GEN 10,000 DAT once ACC also
same mouterakô kai
 knowing not.can SFP
 ‘Among this vast number, one does not even know one [thing].’
 (originally from von der Gabelentz 1832: 58)

(13) **Mandarin:**

Tāmen dāngzhōng, wǒ lián yí-ge rén yě bú rènshi.
 they among I even one-CL person YE not know
 ‘I don’t even know a single person among them.’

As shown by (12) and (13), the Manchu sentence and the Mandarin sentence share the same sequence: “focus constituent + *inou/yě* + negation + predicate”. Considering the fact that Manchu, in contrast to Mandarin, is a heavily left-branching Altaic language which has its focus particle on the right of the focus, the current “unusual” Mandarin pattern shown in (13) may have been the result of language contact and was “modelled according to the Manchu type”, as speculated by Hole (2004: 292). This observation made by Hole has clearly shown the similarity between two genetically different languages. Language contact might be a possible account for Mandarin preposed foci in *no matter* and *even* contexts. A similar hypothesis that the fronted object pattern in northern Chinese may result from the influence of Altaic languages has been proposed by Norman (1988: 20).

However, my data does not support any influence from Manchu in this regard; if there is any Altaic influence at all, it must predate the advent of the Manchus. For instance, all the three different use types mentioned in this dissertation can be found in the *Lao Ch’i-ta* (老乞大) which was a widely used and one of the most authoritative textbooks of colloquial Chinese for Koreans in the Yi Dynasty (1393-1910 A.D.). Though the exact time of publication of the book is unknown, it is often believed that the book was at latest written in the early Ming dynasty (1368-1644 A.D.) or even as early as in Yuan dynasty (1271-1368 A.D.) (Dyer 1983: 3-5). The language recorded in the book does not correspond with that used during the Qing dynasty (1644-1911 A.D.), a period when the Manchu language arguably had its biggest influence on Mandarin. Almost all the different use types of *yě* in modern Chinese discussed in this dissertation can be found in *Lao Ch’i-ta*, as demonstrated below. The following examples and translations are taken from Svetlana Rimsky-Korsakoff Dyer’s (1983) “Grammatical Analysis of the *Lao Ch’i-ta*”.

1) Additive use type

- (14) *Lítou yě yǒu wán-de me?*
 inside YE have mischievous-ATTR SFP
 ‘Are there also any mischievous ones among them?’
 (Dyer 1983: 216)

In addition, the correlative ‘*yě...yě*’ construction can also be found, as is shown in (15):

- (15) *Jiāo nǐ yí rì xīnkǔ.*
 make you one day work.hard
Wǒmen jiǔ yě zuì-le, chá fàn yě bǎo-le.
 we wine YE drunk-PERF tea meal YE full-PEFR
 ‘We have made you work all day. We have had enough wine and enough
 tea and food. too.’
 (Dyer 1983: 248)

2) Scalar *yě*

Examples show that a scalar *yě* is used in the *even* context with a preceding minimizer like in (16) and in a concessive conditional context like in (17):

- (16) *Zánmen měinián měiyuè měirì kuàihuo.*
 we every.year every.month every.day happy
Chūnxiàqiūdōng yí-rì
 spring.summer.autumn.winter one-day
yě bú yào pī le.
 YE not will cast.away SFP
 ‘We should be happy every year, every month and every day. We
 mustn’t cast away even one day in the spring, summer autumn or winter
 (i.e., be unhappy).’
 (Dyer 1983: 41)

- (17) *Xiū shuō nǐ liǎngsān-ge rén,*
 don’t say you two.three-CL people
biàn shì shí-shù-ge kèren,
 even.if is ten.or.more guest
yě dōu yǔ chá fàn chī.
 YE DOU to tea meal eat
 ‘I could have given tea and a meal, not only to you two or three people,
 but even to ten or more people.’
 (Dyer 1983: 37)

3) Modal *yě*

Modal *yě* which marks concession can also find its examples in *Lao Ch’i-ta*, as is shown in (18) expressing a criticism and (19) expressing a reluctant acceptance:

- (18) *Zhè mài-jiǔ-de, yě kuài chán.*
 This sell-wine-ATTR YE too bothering
 ‘You are a nuisance (lit. this wine-seller is good at bothering, i.e., dragging the discussion on and on.)
 (Dyer 1983: 239)
- (19) *Ruò jiāodào tā, bú lìshēn chéng-bu-dé rén,*
 if teach he not establish.self succeed-not-able man
yě shì tā-de mìng yě.
 YE is his fate SFP
 ‘If, after educating him, he does not establish himself and cannot succeed in life, that is his fate.’
 (Dyer 1983: 196)

Another interesting observation made by Dyer (1983: 190) is that when *yě* is used at the end of a sentence in *Lao Ch’i-ta*, it often indicates a completion of action or a change of situation which can interchange with *le* or *le yě*. Apparently, this use type of *yě* has disappeared in modern Chinese. See the following examples:

- (20) *Zhè gōng hé xián, dōu mǎi le.ye.*
 this bow and string all buy SFP
 ‘Now I have bought both the bow and the string.’
 (Dyer 1983: 191)
- (21) *Zhè záowǎn, rìtōu luò yě.*
 this time sun set SFP
 ‘It is so late now and the sun has set.’
 (Dyer 1983: 191)
- (22) *Míngxīng gāo le. Tiāndào dài míng yě.*
 morning.star high SFP sky.way wait bright SFP
 ‘The star is high, soon it will be dawn.’
 (Dyer 1983: 190)

Note that although *yě* is often used as a sentence final particle in Classical Chinese, the use type shown in (20) – (22) is in fact not a typical function of

Classical Chinese *yě*.⁷³ In Classical Chinese, the equivalent particle to sentence final *le*, instead of *yě*, is *yǐ* (矣) which can be used at the end of a sentence to denote that the event has happened or will happen soon or that a change of situation will occur or has occurred. *Yě* in Classical Chinese is often used as a mood particle at the end of sentences expressing factuality, explanation, affirmation or judgement, or it can be used after the topic functioning as a pause or a topic marker. It has nothing to do with tense or aspect (Wang Li 1980: 443-445; He Yongqing 2016: 187-190; Mei Guang 2018: 454-460). The three examples from *Lúnyǔ* ‘The Analects’ below demonstrate the function of *yě* in Classical Chinese. All the translations are taken from James Legge’s famous translation of the *Lúnyǔ*.

- (23) *Fūzǐ* *zhī* *wénzhāng*,
Confucius ATTR principles and ordinary descriptions
kě dé ér *wén* *yě*.
can get and hear SFP
‘The Master’s personal displays of his principles and ordinary descriptions of them may be heard.’
(From *Lúnyǔ: Gōngyě Cháng*: 13)
- (24) *Zǐ* *yuē*: “*Xiǔ* *mù* *bù* *kě* *diāo* *yě*,
Confucius said: rotten wood not can carve SFP
fèn tǔ *zhī* *qiáng* *bù* *kě* *wū* *yě*,
dung earth ATTR wall not can t rowel SFP
yú *Yú* *yǔ* *hé* *zhū*”.
to Yu PRT what blame
‘The Master said, “Rotten wood cannot be carved; a wall of dirty earth will not receive the trowel. This Yu! - what is the use of my reproving him?”’
(From *Lúnyǔ: Gōngyě Cháng*: 9)

⁷³ Classical Chinese or *wényán wén* refers to the written form of Chinese from the end of the Spring and Autumn period (approximately 771 to 476 BC) to the end of the Han Dynasty (206 BC–220 AD). According to Jerry Norman (1988: 83), Classical Chinese must have been based on the vernacular language of that period when it was created, although it became a purely written language later on. The sources that I cite in this chapter, i.e., The Analects or *Lúnyǔ* and Mozi, are two of the masterpieces written in Classical Chinese.

- (25) *Huò yuē* : “*Yōng yě*,
 someone said Yong TOP
rén ér bú nìng.”
 virtuous bu not ready.with.the.tongue
 ‘Someone said, “Yong is truly virtuous, but he is not ready with his
 tongue.”’
 (From *Lúnyǔ: Gōngyě Cháng*: 5)

As shown above, *yě* in (23) and (24) is used sentence-finally to confirm or emphasize the statement or judgement. And it is inserted in between the NP topic and the comment as a topic marker in (25).

According to Dyer (1983: 195), instances of *yě* with the typical functions in Classical Chinese are in fact difficult to find in *Lao Ch'i-ta*. Only a few instances of sentence-final *yě* expressing “emphasizing the exclamation” can be found. It is consistent with Wang Li’s speculations that after the *zhōnggǔ* ‘middle ancient’ period (about 400 – 1200 A.D.), the Classical Chinese use of *yě* became less frequent due to the copular *shì* ‘to be’ becoming more widely used.⁷⁴ The ways that *yě* was used in *Lao Ch'i-ta* provide us with a snapshot of this development. Another speculation is that the use of *yě* and *yǐ* has been merged into one *yě* which could interchange and co-occur with the sentence final particle *le* during/before the period of *Lao Ch'i-ta*’s publication.⁷⁵ The sentence final particle *le* won in the competition with *yě*. As a result, as a sentence final particle, *yě* finally disappeared from colloquial Chinese. This speculation surely calls for more evidence and investigation.

Furthermore, the additive particle in Classical Chinese was *yì* (亦) rather than *yě*, as shown in (26):

- (26) *Nì yuàn ér yǒu qí rén,*
 conceal resentment and make.friends that man
Zuǒ Qiūmíng chǐ zhī, Qiū yì chǐ zhī.
 Zuo Qiuming be.ashamed.of this Qiu also be.ashamed.of this
 ‘To conceal resentment against a person, and appear friendly with him,
 Zuo Qiuming was ashamed of such conduct. I also am ashamed of it.’
 (From *Lúnyǔ: Gōngyě Cháng*: 25)

⁷⁴ According to Wang Li’s hypothesis on the history of the Chinese language (1980: 35), the period around the 12th century and 13th century is the transitory phase from the *zhōnggǔ* ‘mid-ancient’ period to the *jìndài* ‘modern’ period.

⁷⁵ I did not find any instance of *yǐ* in *Lao Ch'i-ta*

Although no instance of *yì* being used in an *even* context with a preceding object is found, *yì* is found in *even if* sentences, as demonstrated in (27):

- (27) *Suī* *gǔ* *zhī* *Yáo Shùn Yǔ* *Tāng Wén Wǔ*
 even.if ancient ATTR Yao Shun Yu Tang Wen Wu
zhī wéi zhèng, yì wú yǐ yì cǐ yǐ
 TOP do governing YI not.have use differ this SFP
 ‘Quite the same as they would be even in the government of Yao, Shun,
 Yu, Tang, Wen, and Wu.’
 (From *Mòzǐ 7-tiānzhi III: 7*)

In light of the use of *yì* in Classical Chinese, it is not clear when and how the preverbal *yě* used in (14) – (19) emerged and replaced *yì* (at least in colloquial Chinese). I shall use this historical mystery to end my dissertation.

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English summary

By examining three usages of the Mandarin particle *yě* (additive *yě*, scalar *yě* and modal *yě*), this dissertation provides a comprehensive syntactic and semantic study of *yě*. I reach the conclusion that there are at least two different *yě*s, namely, the additive/lower *yě*, which is situated in the IP, and the scalar/higher *yě*, in the CP. The modal use of *yě* shows a close connection to scalar *yě* and may occupy the same high position as scalar *yě* in the CP.

Although the *yě*s in the different contexts are similar in invariably evoking alternatives in their respective context, both the mechanism activating these alternatives and the relation between the alternative proposition(s) on the one hand and the proposition expressed by the host sentence on the other are very different. The alternatives that additive *yě* is associated with are real and verifiable alternatives and are not arranged on any scale. In contrast, the alternatives evoked in the scalar contexts are mere *possible* alternatives and are ordered on a scale, provided by the context, on which the degree of likelihood is measured.

The dissertation consists of six chapters. In **Chapter 1**, I introduce the classification and provide examples of each use type of *yě*, i.e., the additive use type, the parametric/scalar use type and the modal use type. A number of questions that come up when considering L2 learners' errors are presented for further consideration elsewhere in the dissertation as well.

The additive use of *yě* is discussed in detail in **Chapter 2**. I argue that, as a focus particle, an additive particle is a discourse-anaphoric element in nature. Due to this anaphoric nature, it resists presupposition accommodation and always requires an antecedent which can be verifiable in the preceding context. I argue that discourse similarity, especially similarity in argumentative orientation between the antecedent and the host sentence, is the crucial element to license the use of additive *yě*. The relation between additive *yě* and the constituents within the host sentence, i.e., the AC (added constituent) and ID (identical constituent), is discussed in detail. My Mandarin data displays a similar AC/ID pattern as Reis and Rosengren (1997) observed for German. This is shown below:

(1) AC/ID patterns of stressed *YE* and unstressed *yě*

([AC]_{CT}) (AC) (ID) *YE* ID (ID)
 (ID) *yě* [AC]_F (ID) (ID)

Even though *yě* is sometimes stressed while being unstressed at other times, I argue for a uniform analysis of the meaning/function of the two variants.

Chapter 3 is devoted to the syntactic survey of additive *yě* and parametric *yě*. The syntactic survey shows the existence of at least two

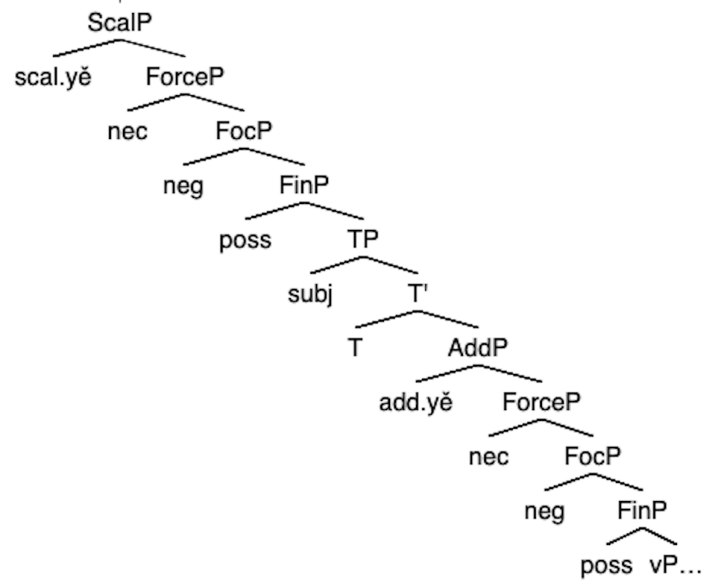
positions for *yě*, one in CP and the other in IP. Firstly, I put forth evidence to prove that additive *yě* is an IP adverb, i.e., it occurs in a position lower than the outer subject, i.e., [Spec, IP], but higher than the inner subject, i.e., [Spec, vP]. In order to determine the exact positioning of additive *yě* in the IP, I introduce two diagnostics. The first is the modal hierarchy proposed by Butler (2003) and the second is the adverb hierarchy proposed by Cinque (1999). I conclude that the position of additive *yě* is higher than the root necessity modals but lower than the subject, as is indicated below:

(2) Epistemic necessity < Negation < Epistemic possibility < (Strong) subject < Additive *yě* < Root necessity < Negation < Root possibility < vP

The positioning of additive *yě* in Cinque's adverb hierarchy leads to a similar conclusion. By using the same diagnostics, I conclude that parametric *yě* occupies a higher position in the structure than additive *yě*, and presumably also higher than the epistemic necessity modals and corresponding adverbs.

In **Chapter 4**, I attempt to demonstrate that the higher CP *yě* in fact has a different interpretation than additive *yě*. I argue that parametric *yě* has a scalar nature, showing that it cannot be used in a pure free-choice (FC) context, such as a *no matter* context with a pure FC reading: it can only be licensed whenever scalarity is marked in the sentence. For instance, when a sentence contains an inherent scalar phrase such as *even* or a minimizer, the use of *yě* is licensed. In addition, negation and modality may also contribute in providing scalarity and warranting the use of *yě*. Meanwhile, another licensing condition of parametric *yě* is the existence of the extreme of the scale provided in the sentence. In light of my observation of the scalar nature of parametric *yě* and in line with Hole's (2017) proposal, I argue that parametric *yě* is the head of a scalarity phrase (ScalP) and show that the ScalP headed by scalar *yě* is above the ForceP headed by an epistemic necessity modal in the CP. In the end, I placed **two *yě*s** in Butler's syntactic structure, i.e., one in the CP and the other in the IP, as is shown in (3):

(3)



Chapter 5 investigates three different contexts in which modal *yě* can be used, i.e., the “criticism” context, the “acceptance” contexts and the “denial” context. I argue that modal *yě* is a concessivity marker and in all three contexts invariably denotes a concessive relation between a contextual proposition and the proposition expressed by its host sentence. I also demonstrate that there exists a close relationship between the modal use and the scalar use of *yě*.

Chapter 6 provides the conclusion and discusses two remaining issues, one relating to quantifier *dōu*, which sometimes (but not all the time) can be used instead of scalar *yě*, and the diachronic development of *yě*.

Nederlandse samenvatting

Dit proefschrift omvat een uitgebreide syntactische en semantische studie van het Mandarijnse partikel *yě* ‘ook’ door middel van onderzoek naar drie gebruikstypen van *yě*, additief, scalair en modaal. Dit onderzoek toont aan dat er twee verschillende *yě*s moeten worden aangenomen: additief/lager *yě* in de IP en scalair/hoger *yě* in de CP; het modaal gebruik van *yě* is nauw verbonden met scalair *yě* en kan mogelijk dezelfde hoge positionering als scalair *yě* in de CP innemen. Hoewel de verschillende *yě*s zonder uitzondering verschillende alternatieven in de context oproepen, zijn zowel het mechanisme dat deze alternatieven tot stand brengt als de verhouding tussen de alternatieve propositie(s) aan de ene en de propositie in de hoofdzin zelf aan de andere kant zeer verschillend. De alternatieven verbonden aan additief *yě* zijn reëel en verifieerbaar en niet onderhevig aan een scalaire rangschikking. De alternatieven die *yě* in de scalaire context oproept zijn *mogelijke* alternatieven en zijn geordend op een schaal die door de context wordt aangeleverd, bijvoorbeeld een schaal die de mate van waarschijnlijkheid aanduidt.

Het proefschrift bestaat uit zes hoofdstukken. In **hoofdstuk 1** presenteer ik de verschillende classificaties en geef ik voorbeelden van elk gebruikstype van *yě*, het additieve, het parametrische/scalair en het modale gebruikstype. Ook verdiep ik me in vragen die worden opgeworpen door veelgemaakte fouten door L2 leerlingen.

In **hoofdstuk 2** wordt het additieve gebruik van *yě* in detail besproken en geanalyseerd. Ik stel vast dat een additief partikel, als een focuspartikel, discours-anaforische van aard is. Vanwege deze anaforische eigenschap, faciliteert het partikel *yě* geen aanpassing aan of harmonisatie met de presuppositie (presupposition accommodation) en vereist het dat er in de voorafgaande context een verifieerbaar antecedent aanwezig is. Ik laat zien dat gelijkenis in verhandeling (discourse) het cruciale element is dat het gebruik van additief *yě* faciliteert. Met name de oriëntatie in argumentatie tussen het antecedent en de hoofdzin is van cruciaal belang. Ook ga ik in op de verhouding tussen additief *yě* en de constituenten in de hoofdzin, m.n. de toegevoegde constituent (AC) en de identieke constituent (ID).

Mijn data in het Mandarijn tonen een grote mate van overeenkomst aan met het AC/ID patroon dat is vastgesteld voor het Duits door Reis en Rosengren (1997):

- (1) **AC/ID patronen van beklemtoond YE en onbeklemtoond yě**
 ([AC]_{cr}) (AC) (ID) YE ID (ID)
 (ID) *yě* [AC]_F (ID) (ID)

Ik beargumenteer dat er een uniforme analyse mogelijk is van de betekenis/functie van onbeklemtoond *yě* (dus zonder nadruk) en beklemtoond *yě* (met nadruk); de nadruk is dus op dit punt irrelevant.

Hoofdstuk 3 is gewijd aan de syntactisch eigenschappen van additief *yě* en parametrisch *yě*. Dit hoofdstuk toont aan dat we twee plaatsen in de syntactische structuur moeten aannemen, één in de CP en één in de IP. Eerst laat ik zien dat er goede redenen zijn om aan te nemen dat additief *yě* een IP bijwoord is, d.w.z. dat het lager is gepositioneerd dan het buitenonderwerp (outer subject) in [Spec, IP], maar hoger dan het binnenonderwerp (inner subject) in [Spec, vP]. Hierna introduceer ik twee diagnostische tests om de exacte positionering van additief *yě* in de IP te bepalen, namelijk de modale hiërarchie van Butler (2003) en de hiërarchie van bijwoorden van Cinque (1999). Tot slot concludeer ik dat de positie van additief *yě* hoger is dan modalen van noodzaak (root modals), maar lager dan het onderwerp, zoals hieronder aangegeven:

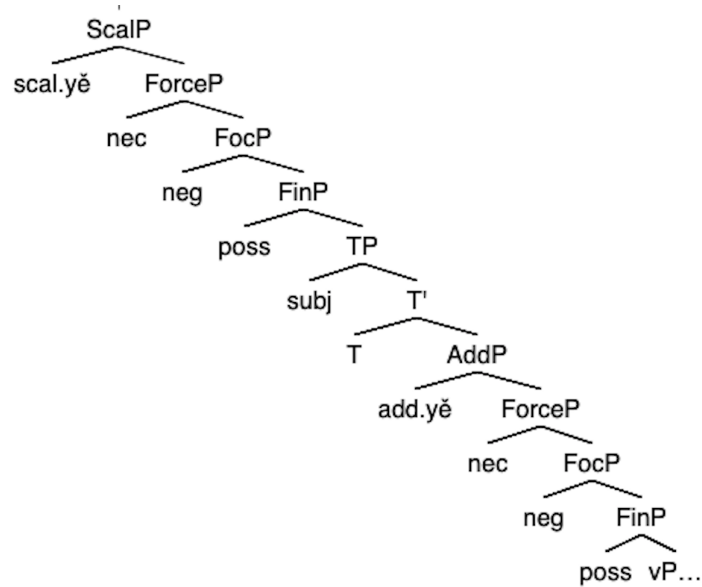
(2) Epistemische noodzaak < Ontkenning < Epistemische mogelijkheid < (Sterk) onderwerp < Additief *yě* < Wortel noodzakelijkheid < Ontkenning < Wortel mogelijkheid < vP

De plaatsing van additief *yě* in Cinque's hiërarchie van bijwoorden leidt tot een soortgelijke conclusie. Gebruikmakend van dezelfde diagnostische tests concludeer ik verder dat de positie van parametrisch *yě* in deze structuur hoger is dan additief *yě* en waarschijnlijk hoger dan de modalen van epistemische mogelijkheid en corresponderende bijwoorden.

In **hoofdstuk 4** probeer ik aan te tonen dat de hoger geplaatste *yě* (in de CP) een andere interpretatie heeft dan additief *yě* (in de IP). Ik laat zien dat parametrisch *yě* scalair van aard is en dus niet gebruikt kan worden in een puur vrije-keuze context (free choice, FC), zoals een *no matter* context ('om het even') met een FC interpretatie. Parametrisch *yě* kan alleen gebruikt worden als er een graduele schaal in de zin tot uitdrukking gebracht wordt, zoals bijvoorbeeld, inherent het geval is met uitdrukkingen als *zelfs* of een minimaliseerder (minimizer). Daarnaast kunnen ontkenning en modaliteit ook bijdragen aan het verschaffen schaal en zo het gebruik van *yě* rechtvaardigen. Tegelijkertijd moeten de uiteinden van de schaal ook duidelijk zijn, anders is het gebruik van parametrisch *yě* niet grammaticaal.

Vervolgens beargumenteer ik geheel in overeenstemming met wat Hole (2017) beweert, dat parametrisch *yě* het hoofd van ScalP (ScalarP) is. Syntactisch gezien zit ScalP, met scalair *yě* in het hoofd, boven de ForceP, met in het hoofd een epistemische mogelijkheidsmodaal, in de CP. Tot slot positioneer ik de **twee *yě*s** in de syntactische structuur van Butler, de ene in de CP en de andere in de IP, zoals te zien is in (3):

(3)



Hoofdstuk 5 gaat in op drie verschillende contexten waarin modaal *yě* gebruikt kan worden, namelijk “kritiek”, “acceptatie” en “ontkenning”. Ik laat zien dat modaal *yě* concessief van aard is en in alle drie de contexten op een concessieve relatie duidt tussen de propositie uit de context en die die in de zin zelf wordt uitgedrukt. Ook laat ik zien dat er een nauwe relatie bestaat tussen het modaal gebruik en het scalaire gebruik van *yě*.

Hoofdstuk 6 vat dit proefschrift samen en stelt twee resterende vragen ter discussie, namelijk twee hypothesen die te maken hebben met *dōu*, dat soms in plaats van *yě* gebruikt kan worden, en een kort historisch onderzoekje, waarin ik kijk naar het gebruik van *yě* in *Lao Ch'i-ta*, een lesboek dat in de Yi-dynastie (1393-1910) gebruikt werd in Korea, en in het klassiek Chinees.

中文摘要

通过考察汉语“也”的三种用法，本论文在句法和语义上对“也”进行了较全面的分析。由此，我们得出结论，存在两个不同的“也”，即添加性/低位（位于 IP）“也”和量级性/高位“也”（位于 CP）。同时，“也”的情态用法也和其量级性用法密切相关，因此可能与位于 CP 位置的量级性“也”处于同一句法位置。尽管在不同语境下“也”的是用都会引发替代选项 (alternatives)，但是激发这些替代选项的机制以及主句命题和替代命题之间的关系在不同语境下迥异。添加性“也”是真实可验证之命题，且命题之间不存在量级关系。在量级性语境中的“也”所激发的替代选项是可能命题，且按某种语境中所提供的量级，比如可能性大小，有序排列。

本篇论文包括六大章节。**第一章**举例说明了“也”的分类及用法，即添加性 (additive) 用法、参数化 (parametric) 用法、情态 (modal) 用法三大类。同时，本章也基于二语习得中关于“也”的偏误提出了相关研究问题。

第二章详细讨论了“也”的添加性用法。作者主张添加性“也”作为一个焦点助词本质上是一种语篇前指成分。因此，添加性“也”不允许“预设包容” (presupposition accommodation)，而且需要在之前语境中存在可验证该预设的先行命题。作者提出语篇相似性，尤其是先行命题与主句 (host sentence) 命题之间相同的“论点取向” (argumentative orientation) 是使用添加性“也”的关键允准条件。此外，本章也讨论了添加性“也”与主句内部成分（添加成分 (AC) 和类同成分 (ID)）之间的关系。我们由此得出了类似于 Reis and Rosengren's (1997) 提出的关于德语 AC/ID 分布的模式，如下所示：

(1) 重读“也”和重读“也” AC/ID 分布模式

$$\begin{array}{ccccccc} ([AC]_{CT}) & (AC) & (ID) & YE & ID & (ID) \\ (ID) & \text{yě} & [AC]_F & (ID) & (ID) \end{array}$$

尽管如上所示非重读“也”和重读“也”存在差异，本章仍主张二者之间并无意义或功能之别。

第三章重点调查了添加性“也”与参数化/量级性“也”的句法位置。本章论证了“也”在句法中存在两个位置，一个位于 CP，另一个位于 IP。本章先提出了添加性“也”应被视为 IP 副词的证据，即其位于外主语[Spec, IP]之下，内主语[Spec, vP]之上。为了确定其在 IP 范围内的具体位置，本章援引了两个判断工具。其一是 Butler (2003) 提出的情

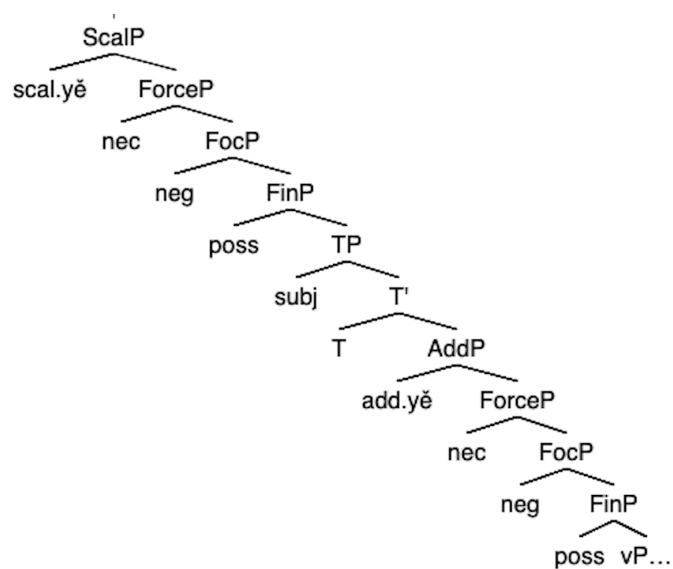
态词句法结构层级，其二是 Cinque (1999) 所提出的副词句法结构层级。本章在此基础上得出结论：添加性“也”在句法中高于根意义必要性情态动词，但是低于主语，如下所示：

(2) 认识意义必要性 < 否定 < 认识意义可能性 < (强) 主语 < 添加性“也” < 根意义必要性 < 否定 < 根意义可能性 < vP

通过调查添加性“也”在 Cinque 所提出的副词法结构层级中的位置，本章得出类似(2)的结论。使用上述两种判断工具，本章得出参数化“也”的位置高于添加性“也”，甚至高于认识意义必要性情态词以及相对应副词。

在第四章，作者试图说明高位 CP “也”在意义上(因而不只在句法上)也不同于低位添加性“也”。本章展示了参数化“也”不能在绝对任选 (free-choice) 语境中(如有任选含义的“无论”语境)使用，而只能用在有量级标记的句子中，由此说明其本质上具有量级性。比如，当句子中有具有量级性内涵的词语，比如“连”，或者极小短语，“也”的使用合法。此外，否定和情态词也可以提供量级性，从而保证“也”的合法使用。另外，使用“也”的另外一个条件是量级极点的存在。由此，两种“也”的语义差别得以说明。与 Hole (2017) 一致，作者认为参数化“也”应被视为量级短语 (ScalP) 的中心语。结合之前的句法位置调查，以量级性“也”为中心语的 ScalP 应该高于处于 CP 范畴内以认识意义必要性情态词为中心语的 ForceP。这样我们就可以把两个“也”分别放在 CP 和 IP 之内，如下所示：

(3)



第五章调查了情态“也”出现的三种语境，即“批评”“接受”和“否定”。作者主张情态“也”作为让步标记在三种语境中皆表示语境隐含的命题和主句所表达命题之间存在让步关系。作者也认为情态“也”与量级性“也”存在密切关系，甚至有可能在句法中处于同一位置。

第六章对本论文做了总结并讨论了两个遗留问题，即关于“都”的两个假设和“也”在《老乞大》这一明清时期朝鲜人的汉语口语教材中和文言文中的用法。

Curriculum vitae

Zhaole Yang was born in Shandong, China, on March 24, 1987. He received a double BA degree in English and Education from Shandong University in 2009. He completed his MA in Teaching Chinese as a Foreign Language at the same university in 2012. He moved to the Netherlands to teach Mandarin for the Confucius Institute at Leiden University in 2011. He started his PhD research in 2014. He is currently a lecturer at the Leiden Institute for Asian Studies and teaches Mandarin in the BA China Studies and the BA International Studies.