The Modal and Discourse Properties of Utterance-Final Particles in Mandarin

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for Mama,

Sisters and Papa

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Declaration

I, Chiawei Wang, declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where states otherwise by reference or acknowledgment, the work presented is entirely my own.

Abstract

Utterance-final particles (UFPs) are function words that are frequently used in everyday conversation. Unfortunately, as a category, they are difficult to characterise due to their notoriously ambiguous nature and lack of referential meaning. It appears that existing approaches are insufficient to pin down a core meaning and to distinguish the effect of the particle being either present or absent. Their claimed meanings are in general either too broad to explain the restrictions on their use or too specific and inviting a wide range of counterexamples. Therefore, further research is required to examine how UFPs are processed to arrive at the communicative goals of interlocutors.

To fill this gap, the current study aims to investigate the communicative functions of UFPs *ā*, *ǎ*, *bā* and *bǎ* in Mandarin from a semantic and pragmatic perspective. In particular, I explicate how the speaker's intention towards the target proposition is presented, by looking at the modal and discourse properties of these particles on the basis of crosslinguistic evidence. Having examined these particles in a wide range of contexts, I suggest that the speaker communicates with the listener to achieve particular goals through the management of common ground when the particles in question are present as compared to when they are not. The source of knowledge from which the speaker receives the information plays an important role in the use of these particles in the broader discourse context. Furthermore, UFPs serve to signal certain discourse effects between discourse segments, which shows how the speaker manipulates utterances with particles attached in order to interact with the listener. Besides, an experiment takes place to test whether participants are satisfied with the senses identified by prior studies for the particle *ā*.

Lay summary

Chinese languages are known to have a large number of utterance-final particles (UFPs). Traditionally, these particles are often considered in most dictionaries to be meaningless intensifiers, which add force to the statement to which they are applied. Despite the fact that they are frequently used in everyday conversation, it seems that we know little about their lexical meanings. Hence, the debate on their interpretation and use never seems to have an end.

The current study provides us a further step towards the better understanding of UFPs with an aim to investigate the communicative functions of particles *ā*, *ǎ*, *bā* and *bǎ* in Mandarin. This work is crucially informed by a crosslinguistic perspective, combining experimental investigations into their meaning and function with novel theoretical analyses. In particular, conceptual links are established between the treatment of UFPs in Mandarin and modal particles in other languages, notably those in German. A sophisticated model is thus built to indicate how UFPs are processed in the broader discourse, illustrating how speakers make use of these particles to communicate and interact with their listeners in an efficient fashion.

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Glossary of grammatical terms

1	1st person
2	2nd person
3	3rd person
AUX	auxiliary
CL	classifier
CONT	continuous
COP	copula
DUR	durative
EXP	experiencial
EXT	existential
F	feminine
FOC	focus
FORM	formal
GEN	genitive
INT	interrogative
M	masculine
N	neuter
NEG	negation
PART	particle
PFV	perfective
POSS	possessive
PL	plural
PROG	progressive
PN	proper noun
SG	singular
STR	structural

Abbreviations

c	commitments
CG	common ground
cs	commitments set
D	declarative
DP	discourse particle
HLDA	high level discourse act
I	interrogative
K	context
MP	modal particle
p	propositional content
ps	projected set
s	set of possible worlds
SAL	salience
TB	table
UFP	utterance-final particle

Symbols

$\neg$	negation
$\wedge$	conjunction
$\vee$	disjunction
$\rightarrow$	material implication
$\{a,...,b\}$	set consisting of elements a,...,b
$\{x \mid f(x)\}$	set of elements x satisfying property f
$\varnothing$	null set
$\in$	set membership
$\notin$	set non-membership
$\cup$	set union
$\cap$	set intersection
$\subset$	proper subset relation
$\supset$	proper superset relation
$\subseteq$	subset relation
$\supseteq$	superset relation
$\exists$	existential quantifier
$\forall$	universal quantifier
$\vdash$	entailment
ϕ	proposition
$*$	ungrammatical
#	semantically or pragmatically incoherent

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Chapter 1

Introduction

Like a great many other languages of the world, Mandarin makes frequent use of utterance-final particles. These particles – henceforth UFPs – include such items as *a*, *ba*, *ma*, *ne*, *o* and *la*. They are always uninflected and are function words[1]. Rather than an extension of another category, they can be analysed as having a separate grammatical category in their own right and taking the entire clause within their scope (see Paul & Pan, 2016; Tang, 1996). Furthermore, they are often claimed to make no contribution to the truth conditions of the proposition expressed by a sentence, but rather serve as a device for pointing out the stance of a speaker (see Li, 2006; Simpson, 2014). In other words, UFPs appear to possess expressive meaning rather than descriptive meaning. In general, these particles serve to indicate speakers' attitude towards the proposition expressed by the rest of the clause and to associate the proposition with interlocutors' common or mutual knowledge.

The attitudinal functions of UFPs, an essential discourse feature of a number of East and Southeast Asian languages such as Cantonese and Thai, are inseparable from the expression of attitudes on the part of the speaker (Chappell & Peyraube, 2015; Panov, 2020). Speakers tend to make use of these particles in

[1]Function words are words that have little lexical meaning. They can either express grammatical relationships among other words within a sentence or specify an attitude of the speaker. Note that particular functions such as to index a subjective attitude of the speaker are usually not accessible in traditional dictionaries. Words that are not function words are often called content words such as nouns, verbs, adjectives and adverbs. In general, they contribute to the meaning of the sentence in which they are present (Klammer et al., 2013).

order to either exhibit their own stance or mark attention to the listener's point of view, which facilitates interaction and collaboration in conversation (Wu, 2004; Lin, 2014b). Without particles attached, sentences may remain complete and grammatical. Omitting these particles, however, has an impact on the pragmatic functions and interactional meaning of the sentence (see Fischer, 2006; Fraser, 1999; Schiffrin, 2001; Zeevat, 2006).

1.1 Background

Since the 1960s, the research in UFPs has centred on coding one or multiple meanings for each particle. Most of the earlier studies focus on the speech acts in which the particles participate, taking account of the utterance's performative function in language and communication such as requesting, commanding, promising, greeting, inviting, warning and so on (see Alleton, 1981; Chao, 1968; Chappell, 1991; Lu, 1999). It is worth noticing that some of these particles are claimed to encode up to ten different functions. On such an analytic approach, the interpretation of UFPs has become obscure and confusing by virtue of the fact that unlimited speech acts can be derived from a wide variety of contexts. Additionally, discerning the difference between certain particles may be challenging because they can result in similar speech acts when they are present under similar circumstances. For example, on the basis of the research from Chao (1968) and others, UFPs *a*, *ba*, *ne* can all be employed to generate a 'warning' reading towards the proposition. To the extent that the particles contribute to the same kinds of speech act, it can be difficult to tell apart their core meaning at this level of description.

By contrast, the majority of later studies report that each particle boasts a core characteristic to help interlocutors interpret the pragmatic meaning of the utterance in terms of the speaker's intention (see Chu, 2009; Li, 2006; Lin, 2014b; Lu, 2005; Wu, 2004). Nonetheless, a number of inconsistencies in these studies still remain unaddressed. For example, most of their analyses have argued that the particle *ba* indicates speaker uncertainty (see Chu, 2009; Li, 2006; Lu, 2005).

However, we note that speakers can express the facts that they may be sure of when the particle is present. Unfortunately, these studies fail to tell us why this particle can sometimes be applied to in contexts of speaker certainty. This raises the question of whether the characterisation of the particle as possessing a core meaning of indicating certainty is incorrect, or whether the conflicting data can be explained by other means.

In order to reveal how the contextually sensitive UFPs contribute to the meaning of their carrier utterances, it is important to understand how conversation participants draw inferences on the basis of these particles. Consider the following example in which a person utters a sentence with the tone of an impatient attitude and requires someone who they have just met to open the door at once:

(1) Kuàidiǎn bǎ mén dǎkāi **a**[2].
quickly dispose door open PART
'Open the door quickly **a**.'

The utterance in (1) conveys that the speaker reminds the listener that they should have taken the action even before the speaker made the request. In other words, the listener was supposed to open the door, but they did not do so. However, when the speaker and listener are not on the same page, the utterance with the particle applied may not fulfil its purpose as a reminder of the particular knowledge shared between them. In such a case, this type of usage may lead the utterance to be infelicitous. As a consequence, UFPs appear to be relevant to the introduction of making inferences in the discourse. To use these particles out of the blue may be inappropriate when there is no mutual knowledge that conversation participants can base their beliefs on.

Furthermore, prior studies appear to provide only circumstantial evidence of a clear picture of the use of UFPs. Despite the fact that Mandarin UFPs can be realised with distinct tones, the pitch height of these particles is often neglected. With the method of treating pairs of UFPs that contrast only in pitch height as

[2]Throughout the study, **boldface** will be applied to highlight the relevant aspects of the examples and technical terms.

pitch variants, it can be difficult to explicate the interpretation and use of these particles. Consider the following examples in which all the particles are applied under the same linguistic environment[3]:

(2) Zǒu **ā**.
go PART
'Go **ā**.'

(3) Zǒu **ǎ**.
go PART
'Go **ǎ**.'

(4) Zǒu **bā**.
go PART
'Go **bā**.'

(5) Zǒu **bǎ**.
go PART
'Go **bǎ**.'

From (2) to (5), the particles *ā*, *ǎ*, *bā* and *bǎ* are placed at the end of each utterance respectively. All these options are potentially felicitous, but all bear different meanings.

To illustrate this, suppose that a couple of friends will be having lunch in a restaurant at midday. When it is close to twelve o'clock, the utterance with the particle *ā* applied as shown in (2) appears to be felicitous to implicate that they may be in a hurry to leave for their appointment. Otherwise, the utterance borne with particle *bā* as in (4) would be more acceptable, which suggests that they might still have plenty of time to get to the restaurant. Furthermore, under different circumstances such as after the request of leaving is issued, example (3) with the use of the particle *ǎ* can serve to display the speaker's ignorance of what is being said and to indicate that a confirmation from the listener is desired. Finally, the speaker may utter (5) with the tone of a desperate attitude to beg

[3]In the present study, in order to easily separate UFPs on the basis of their pitch heights, we apply the diacritical mark m**ā**cron to the particle for high level tone and c**ǎ**ron for the mid-low falling tone, which are in line with the diacritical mark for 1st tone (high level) and 3rd tone (mid-low falling) respectively in the Mandarin dialect of Taiwan.

the listener to leave for the restaurant right away. With proper context, we can make use of it to determine how to use these particles felicitously. That is to say, sufficient contextual information may be useful for us to explicate how the listener interprets the speaker's intention towards the target proposition.

No matter which approach in the literature is adopted, it is difficult to differentiate UFPs in terms of their interpretation and use. Be that as it may, it is clear that these particles should be treated as different linguistic items by virtue of the fact that their distribution is contrastive. That is to say, the occurrence of these particles seems not to be randomly interchangeable when they are used in different situations.

1.2 Goals for the research

This thesis addresses the following questions which are left open by the previous literature, as discussed above:

i. What modal and discourse properties do UFPs carry in Mandarin?

ii. When UFPs are applied, what information do speakers share with listeners in respect of organising the common ground?

iii. How are pairs of UFPs that contrast only in pitch height fundamentally different from one another?

iv. What discourse relations can be licensed by UFPs?

In the current study, we examine the communicative functions of the particles *ā*, *ǎ*, *bā* and *bǎ* in Mandarin in an attempt to fill the research gap. In particular, given the fact that UFPs are suggested to behave in a fashion analogous either to modal particles (MPs) or to discourse particles (DPs) (see Chang, 2012; Lepadat, 2017), we would like to know how modal properties interact with discourse properties when these particles are present. Furthermore, given that UFPs can be applied to facilitate the interaction and collaboration in conversation, it is important to know that how the speaker organises the

information in the common ground to share with the listener. The pitch height of UFPs is also a significant issue that should not be ignored in the research. Given that they are associated with different meanings, we should avoid treating pairs of UFPs that contrast only in pitch height as pitch variants. Otherwise, it can be difficult to differentiate them. To get a complete picture of UFPs, it is necessary to understand how the particle with level tone differs from its counterpart with contour tone. Finally, reconstructing discourse relations is an essential task for the listener to comprehend what is intended by the speaker. It is worth examining how UFPs potentially contribute to this process by signalling how parts of the discourse are connected to each other.

1.3 Overview of the individual chapters

In what follows, we provide a brief overview of the research structure and short summaries of what the individual chapters are about.

Chapter 2 provides a summary of various perspectives on UFPs in Mandarin. To begin with, the discussion of the theoretical and empirical background of UFPs is initiated for the purpose of better understanding their interpretation and use. We also examine the characteristics of modal particles and discourse particles from a crosslinguistic perspective, with a view to establishing whether UFPs can be considered as members of either category. In addition, we examine experimentally whether several of the meanings proposed as core for UFPs are stably contributed by the particles across a range of usage contexts. At the end of this chapter, an experiment follows to test whether participants are satisfied with the senses identified by prior studies for the particle $\bar{a}$ with level tone.

Chapter 3 provides an introduction to how contexts in the discourse are built from a crosslinguistic point of view. Relevant mechanisms and technical notions are discussed with an attempt to develop a more sophisticated model that represents the interpretive process of UFPs in the discourse. In particular, we aim to illustrate how different types of information are organised in the

common ground. Furthermore, this chapter discusses the source of knowledge and characteristics of modal devices, which should be useful for our analysis of UFPs in the study.

Chapter 4 presents a detailed analysis of the particles *ā* and *ǎ* in Mandarin. We apply the ideas that have been developed in the preceding chapter to the analysis of these particles. In order to avoid the interpretive bias that may influence our language judgements, we base our observations on a wide range of contexts rather than isolated sentences with no context provided. In general, this chapter discusses the semantics and pragmatics of UFPs in terms of their modal and discourse properties.

Chapter 5 presents a detailed analysis of the particles *bā* and *bǎ* in Mandarin. Principally, we apply the same methods that are utilised for the analysis in the fourth chapter to the fifth chapter. In general, this chapter provides a discussion of the modal and discourse properties of UFPs from a semantic and pragmatic point of view as in the preceding chapter.

Chapter 6 provides concluding remarks for the current study and highlights implications for further investigation.

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Chapter 2

Perspectives on utterance-final particles

The existing literature mainly centres on exploring the meaning and function for each one of the utterance-final particles (UFPs) in Mandarin. UFPs are roughly classified as either modal particles (MPs) or discourse particles[4] (DPs) according to their potential properties, which can sometimes be implicit. However, distinguishing between MPs and DPs itself can be quite problematic. Unfortunately, UFPs are difficult to categorise due to their notoriously ambiguous nature and lack of clear lexical meaning. That is why they are often considered a member of the fuzzy typological category that is difficult to account for.

This chapter examines modal, discourse and other possible pragmatic features of UFPs. We investigate the open issues arising from previous studies of both maximalist and minimalist approaches so as to address the gap that has hindered our understanding of these particles. By 'maximalism', as discussed in **Section 2.3**, we mean approaches which propose that a large number of distinct senses of UFPs are directly encoded in the lexicon; by 'minimalism', as discussed in **Section 2.4**, we mean approaches which aim to identify a single core meaning for each UFP. In general, the maximalism seems to yield too many irrelevant functions, and the minimalism may result in a rather narrow sense. In

[4]In this study, we use the term **discourse particle** in a broad sense. It is not considered a sub-categorical member of other families of discourse devices. Instead, it associates with **discourse markers**, **connectives** or other types of discourse items.

this thesis we will argue that we need a deeper understanding of the pragmatic interpretative processes governing UFPs in order to adjudicate between these competing analyses. Following crosslinguistic work on modal particles, we will specifically explore the roles of common ground and discourse relations on the interpretation of UFPs, and with this goal in mind we will also introduce these notions in this chapter.

In the present study, we examine these particles based on their underlying semantic, pragmatic and discourse properties. We will argue that ultimately striving to classify UFPs as either MPs or DPs is unhelpful. Their categorised names should not have an impact on our interpretation of them given the fact that ill-defined titles can sometimes lead us to a wrong direction that might be far away from their actual usage. At the end of chapter, there is an experiment that tests the current claims with regard to the core properties of UFPs. The findings suggest that current approaches are insufficient to determine a dominant core. Further research is thus required to examine how UFPs are processed to reach the communicative goals of interlocutors.

2.1 Definitions of modal and discourse particles

Before we proceed to the investigation of utterance final particles, we will define the concepts of modal and discourse particles and to examine whether it is possible to draw a borderline between them. The definitions of these two categories might not be utterly straightforward due to their categorial fuzziness. To get a clearer picture of them, however, appears to be important for us to comprehend the use of UFPs.

MPs and DPs are both considered to be multifunctional in that they can operate in cognitive, social, textual and expressive domains (Schiffrin et al., 2001). On the one hand, MPs are said to indicate one's understanding in terms of the argumentative relations that have been constructed in a current situation so as to relate the current utterance to a particular aspect of the interaction between

the speaker and listener[5], such as relations that show the speaker's opposition towards to the proposition of the utterance (Fischer, 2007). In addition, they can specify a relationship between the speaker and listener, which shows how interlocutors interact with one another to exchange their stance (Hansen, 1998). On the other hand, the primary function of DPs is to connect sentences in the discourse level (Hansen, 2008). Apart from their discourse features, DPs are also suggested to occur in the same speech situations as MPs do, such as when the discourse focuses on the speaker's attitudes or intentions towards utterances (Bazzanella, 2006).

Since both types of particles are involved in attitudinal and contextual functions and they do not possess clear lexical meanings, defining and telling them apart become laborious. They are often seen as two sides of the same coin (Degand et al., 2013). Under such circumstances, it can be extremely difficult to establish whether MPs and DPs should be considered only one category or two different categories.

2.1.1 Modal particles

Generally speaking, modal particles are used to express modality, which can be broadly interpreted as the speaker's attitude towards what has been said (Cinque, 1999; Palmer, 2001). In many Germanic languages such as German, Dutch and Danish, although not in English, MPs are generally recognised as a specific word class with little lexical meaning. These particles cannot stand alone to form a sentence on their own, but they have scope over the whole utterance (Cuenca, 2013; Diewald, 2013; Schoonjans, 2013; Waltereit & Detges, 2007). Studies of MPs in German are especially well documented (see Alm et al., 2018; Bross, 2012; Döring, 2016; Dörre et al., 1991; Gast, 2008; Grosz, 2011; Gutzmann, 2009; Karagjosova, 2004). Syntactically, MPs are not inflected to express different grammatical categories such as tense, aspect, mood, voice, case, person, number and gender. They are often restricted to a particular position and a fixed pattern.

[5]The terms **listener**, **addressee** and **hearer** are interchangeable in a broad sense in the current study.

For instance, MPs in German occur in the middle field of an utterance and some of them are combinable (see Kratzer, 1999; Grosz, 2010a) as shown in (6) and (7):

(6) Sie kann **ja** nicht kommen, weil sie muss **ja** **doch**
3SG.F can PART NEG come because 3SG.F must PART PART
ihrer Zwillinge versorgen.
3SG.F.GEN twins look-after
'She **ja** cannot come because she must **ja doch** take care of her twins.'

(7) Sie sind **ja** **doch** ein Akademiker.
2SG COP PART PART an academic
'You are **ja doch** an academic.'

The word order of the particles in combination as in (6) and (7) is fixed. They are always kept in a specific order. The former takes scope over the whole sentence, including the latter particle. Grosz (2010a) argues that *ja* modifies a proposition that is an established fact indicating a sense of 'as you know'. As for *doch*, it not only has the property of *ja*, but also associates with a salient focus which contrasts the modified proposition. Given the fact that *doch* lexically associates with focus and *ja* does not, it follows that *ja* should precede *doch*, but not the other way round. It is not always the case that scope is obligatorily reflected in word order, but it is crosslinguistically common (Musolino & Lidz, 2003). Clearly, the absence of either particle changes the utterance meaning. Without using the particles, the reading of 'as you know' and 'contrasting' cannot be gained.

Döring (2016) suggests that MPs are unstressed in most cases, but stressed equivalents are possible to offer subtle nuances for individual particles. For example, in German the stressed *ja* appears only in imperative sentences, *doch* in interrogative sentences. Consider the following examples:

(8) Komm **ja** nicht wieder erst so spät nach Hause.
come PART NEG again only so late to home
'Don't be home so late again [**ja**][6].'

(9) Findet das Konzert **doch** statt?
find the concert PART instead
'Does the concert really take place [**doch**]?'

As explained by Döring, with a stress tone the particles serve as a emphasiser as in (8) and (9). Otherwise, as mentioned in (6) and (7), *ja* indicates that the listener has already known that going home early was encouraged, and *doch* shows that the speaker assumes an opposite viewpoint in the listener's mind. These attitudinal features, such as how the speaker thinks that the content of the sentence relates to the interlocutors' knowledge, are the most prominent feature of MPs. In the mean time, this important feature happens to be the key culprit in blurring the borderline between MPs and DPs since DPs are claimed to have attitudinal features as well.

Features of MPs can be displayed differently from language to language (Degand et al., 2013). Even though some languages lack the category of MP, such features may be universal and can be expressed in other forms of spoken language crosslinguistically (Fischer, 2000; Waltereit, 2001). Consider the following examples, extracted from König and colleagues (1990):

(10) Die Malerei war **ja** schon immer sein Hobby.
the painting COP PART already always 3SG.M.GEN hobby
'**As you know**, painting has always been his hobby.'

(11) Nimm dir **ruhig** noch etwas Kuchen.
take 2SG PART else more cake
'**Feel free** to have some more cake.'

The particles *ja* and *ruhig* in (10) and (11) mean 'yes' and 'calm' respectively in other word classes. When they are seen as MPs, their expressions can be translated roughly to 'as you know' and 'feel free' in English. In general, it is unnecessary for an individual particle in one language to have a corresponding counterpart in another (Degand et al., 2013). Clearly, this is true for German versus English simply because English does not have MPs.

[6]Note that we place the middle particle with square brackets at the end of the sentence that is translated from the source language when it is somehow difficult to precisely locate the particle in the target language.

2.1.2 Discourse particles

Discourse particles have been a hot topic over a few decades (see Fischer, 2006; Fraser, 1990; Guo, 2015; Jucker & Ziv, 1998; McCready, 2005; Schiffrin, 1987; Schourup, 1999; Urgelles-Coll, 2010). The research in the literature has centred on the function of connectivity, namely how sentences are connected to one another in a logical fashion. These linguistic devices play a role in managing the flow and structure of discourse (see Knott & Dale, 1994; Louwerse & Mitchell, 2003). However, reaching a strong conclusion of pinning down the definitions of DPs seems less possible for many of the existing studies. The investigation of defining DPs has never stopped.

DPs are generally considered a wide set of linguistic devices for working on the management of discourse, which includes the agreement marker *exactly*, amazement marker *wow*, sequential marker *then*, causality marker *because*, introduction marker *so*, coordination marker *and*, resuming marker *well*, rephrasing marker *I mean* and organisational marker *first of all* to name but a few. These particles are located between discourse segments at the discourse level (Waltereit, 2006). They can be adverbs, conjunctions, prepositions, or even phrases that are combined from different categories of word classes. Schiffrin (1987) states that discourse items such as *well*, *then*, *now*, *oh*, *you know* and *I mean* are usually named discourse markers. As for *because*, *so*, *and*, *but* and *or*, they can be classified as discourse connectives.

Similarly to MPs, DPs have little lexical meaning (Sankoff et al., 1997). Most of the time, they are found in the utterance initial position (Fraser, 1988). They can be used to manage the sequential structure of the dialogue (Fischer, 2006), by signalling a relation between discourse segments (Fraser, 1999). Consider the English examples in (12) and (13) and the Mandarin example in (14):

(12) People tend to put on weight in middle age. **However**, gaining weight is not inevitable.

(13) **Well**, I suppose I could fit you in at 15:45.

(14) Nǐ **suīrán** cōngmíng, **dàn** yě yào nǔlì cáinéng chénggōng.
2SG although clever but also want work-hard can succeed
'**Although** you are clever, [**but**] you need to work hard to succeed.'

In (12) and (13), these English particles are usually used in the initial position of a sentence, but they can also be found in utterance-medial and final position. As for the particles in (14), it is worth noticing that these Mandarin DPs can only occur in the initial position. Again, this can differ from language to language.

Hansen (1997) and Sankoff and colleagues (1997) point out that the propositional meaning of sentences does not depend on the presence of DPs. In other words, DPs do not have an impact on the propositional content of their host utterances. Degand and colleagues (2013) describes how DPs serve as indexical elements to guide the listener on how discourse segments are connected to one another coherently, which is an essential element of oral communication. Furthermore, they contribute to the turn taking system and other aspects of speech management. For instance, as in (12), *however* is used to introduce a statement that contrasts with something that has been said previously. In (13), *well* can be used when pausing to consider next words and to mark the resumption. *Suīrán* [although] and *dàn* [but] can be used together to show a logical relation between clauses in Mandarin as in (14), but this is not always the case in other languages such as in English, German and Japanese, where only one should be presented at a time. Such logically cohesive pairs of items, *because* and *so* (and similarly for the following pair) and *although* and *but*, are not uncommonly used simultaneously in the different clauses of a complex sentence in Chinese languages.

2.1.3 Boundaries between modal and discourse particles

Apart from the organisation of texts, Heine (2013) and Liu (2009) point out that the key function of DPs is to relate an utterance to the situation of discourse in terms of the speaker and listener interaction. These subjective and

intersubjective[7] commentary expressions can signal the speaker's attitude. It is clear that these functions can sometimes be found in MPs as well. For instance, as mentioned in **Section 2.1.1**, the speaker applies German particle *ja* to remind the listener that both of them have already known the proposition.

As mentioned earlier, MPs take the whole sentence as their scope, but DPs do not influence the propositional contents of their host utterances. As can be seen, these two types of commentary functions can be categorised differently. Namely, attitudinal properties can be found in the utterance when MPs are used. As for DPs, speaker attitudes are shown between sentences at discourse level. The following English and Dutch examples are coded commentary messages:

(15) **Frankly**, I couldn't care less what happens to him.

(16) Kan je **even** het licht aandoen?
can 2SG PART the light turn-on
'Can you **even**[8] turn on the light?'

In (15), *frankly* indicates that the speaker is being honest about something with an unpalatable attitude. It is to show the speaker's opinion in terms of the relationship between discourse segments. This type of attitudinal devices makes the relations, between the utterance preceding the particle and that which follows it, coherent. On the other hand, Van der Ham (2018) states that *even* in (16) serves as a polite indicator to show that the requested action does not take much time or effort to fulfil. The listener is able to get the reading 'Could you quickly turn on the light for me, please?'. The speaker imposes the additional reading onto the utterance where the particle is used.

Clearly, context plays an important role in interpreting both MPs and DPs. On the one hand, MPs relate the utterance in their scope to the situational context. On the other hand, DPs relate the utterance in their scope to the linguistic context. According to Fromkin and colleagues (2011), context can be

[7]Intersubjectivity has been used in social science to refer to a variety of things, such as common sense, agreement, shared divergences of meaning and so on. In this study, it is defined as the interaction between the speaker and listener. We will discuss this term in more detail in the following chapter.

[8]Note that we mean 'even' as a Dutch particle that we do not attempt to translate it here.

situational and linguistic. Situational context is the general knowledge of the world that a person has, and linguistic context refers to information that was formerly spoken or written. In the present study, we propose to construe MPs as a device to manage the utterance meanings that are derived from the management of subjective or intersubjective knowledge between the speaker and the listener while DPs are to deal with the flow of discourse in terms of the connectivity between sentences. Crosslinguistically, to the best of our knowledge, there are DPs in every language, but this is not the case for MPs. As we mentioned in the previous section, although modal properties are universal, MPs do not exist in a fixed form in every language.

2.2 Characteristics of utterance-final particles

Traditionally, utterance-final particles in Mandarin are known as *zhùcí* [helping words]. They are part of the category of *xūcí* [empty words] that rarely acquires new members. In other words, they are function words belong to a closed category. These functors do not have rich lexical meaning. In most dictionaries[9], they are claimed to be meaningless emphasisers or to be mixed with grammatical mood as part of the features of phrasal verbs. They are often confused with prosodic features as well. For example, prosody is claimed to have an impact on the speaker's attitudes and the interpretation of UFPs (see Liu et al., 1999). It can be difficult to distinguish whether a given pragmatic reading is as a result of prosody or particles. Due to their ambiguous property and definition, UFPs have captured researchers' attention and have been discussed for a few decades.

On the one hand, UFPs are considered a member of the class of modal particles (see Alleton, 1981; Chappell & Peyraube, 2015; Lepadat, 2017; Lu, 2005). UFPs are argued to be part of the modality system that can be encoded by various linguistic items such as modal verbs, modal adverbs and modal particles (Palmer, 2001; Facchinetti, 2003). They can be used to reflect how the speaker

[9]Such as Chòngbiān Guóyǔ Cídiǎn Xiūdìngběn [Revised Mandarin Chinese dictionary], Chòngbiān Guóyǔ Cídiǎn Jiǎnbiānběn [Concise Mandarin Chinese dictionary], Kāngxī Zìdiǎn [Kangxi dictionary] and Hàndiǎn [Han dictionary].

thinks that the content of sentences relates to the common knowledge of the interlocutors or to add mood to the utterance meaning. This indexical function seems to be grammaticalised (Degand et al., 2013). In other words, UFPs can be used to code attitudes such as suspicion, speculation and assertion (Ding et al., 1961), which concerns the semantic field of realis and irealis, illocutionary force and other discourse and pragmatic functions (Chappell, 1991).

As mentioned in **Section 2.1**, modal functions are universal. Particles that are used to express modal functions are a word class that sometimes cannot be found in all languages for their equivalents (Waltereit, 2001). This is why a Mandarin sentence with a UFP used is hard to translate to another language which lacks modal particles. There are a wide variety of particles attached at the end of utterance in languages such as Mandarin, Cantonese, Japanese and Thai. In German, Dutch and Danish, they appear in the middle field.

On the other hand, UFPs are considered to be a discourse particle – that is, as a connecting device to explain the relevance of an utterance to its context (see Chu, 2009; Wu, 2004). It is a fundamental feature for communication given that the listener's interpretation is based on the assumption that the current utterance is coherent with the ongoing discourse (Lepadat, 2017). As mentioned earlier, DPs can be quite similar to MPs with regard to functions such as speech sequence, discourse organisation and discourse structure (Degand et al., 2013; Traugott, 2007; Waltereit, 2001). The most debated feature for both of the categories in question is their attitudinal characteristic (Degand et al., 2013). On the basis of the analyses discussed earlier, we will assume that while MPs are to guide the listener to interpret the speaker's intended utterances, DPs function as pragmatic glue which marks the relationship of the utterances in discourse. Despite the issues of definition, we aim to offer a detailed description of the use of UFPs in later chapters with regard to both their modal functions and their interaction with discourse.

UFPs are often analysed as heads of complement phrases that can project functional phrases. They take scope over the whole sentence (Simpson, 2014), in the same way that MPs do. They always appear at the of end of an utterance

with no influence on the propositional content and cannot be coordinated with conjunctions such as *and* and *or* (Curnow, 2001; Matras, 2000). Clusters of Mandarin UFPs are not allowed either in any kinds of pattern, such as *a ba*, *ma ne* and *ou la*. These particles simply cannot be used next to one another. However, this is specific to Mandarin, as such patterns are allowed in German, Dutch, Taiwanese and Cantonese. Given that the appearance of UFPs do not seem to correlate with the basic syntactic configuration of a language, it is difficult to explain this as a result of broad typological differences between Mandarin and the other languages mentioned. For instance, German is a V2 and V-final language, Mandarin an SVO and Japanese an SOV. Looking at the use of these particles with a discourse-pragmatic perspective may be more productive in explaining this idiosyncrasy (Haselow, 2012).

It is argued that the presence of UFPs is optional because they are simply emphasisers and refer to the propositional meaning of sentences. However, leaving the particles out will have an impact on the pragmatic interpretation of the utterance (Fischer, 2006; Hansen, 1998; Zeevat, 2006; Fraser, 1999; Schiffrin, 1987). As we will discuss further in subsequent chapters, the omission of a particle can lead to difficulties in understanding the interaction between interlocutors or the relation between sentences. Additionally, it has been observed that UFPs are seldom used in scientific writing, conjecturally because a neutral stance might be required in formal contexts (Alleton, 1981; Li & Thompson, 1981; Luke, 1990). Language users tend not to impose personal attitudes on formal writing so as to avoid making their arguments biased. However, these so-called informal attitude markers are not trivial devices in language. Indeed, they are considered indicators of proficiency that checks whether or not a language learner has mastered a language (Chen, 2012).

Pitch variation of UFPs is an issue that has not been paid much attention. Particles in Mandarin are commonly claimed to be unstressed and toneless (Chappell, 1991; Liu et al., 1999; Chao, 1968). However, as pointed out by Li (2006), the analysis of pitch variants should be extended to all particles. In her study, she states that particles have one variant that is with a high tone and

the other with a low tone. A good counterexample has arisen to what Chang (2012) claims, pointing out the importance of pitch variation of UFPs, as follows. Suppose a sales assistant and customer were exchanging their different viewpoints.

(17) Gùkè: Wǒ juédé zhè jiàn qúnzi duì wǒ bù shìhé.
1SG think this item skirt to 1SG NEG suitable

Diànyuán: Wǒ bìng bù tóngyì,
1SG actually NEG agree

* nǐ yīnggāi chuānchuān kàn **bā**.
2SG should wear-wear see PART

Customer: I don't think this skirt suits me.

Sales Assistant: I disagree. * I think you should try it on **bā**.

Chang proposes that the utterance is infelicitous when the particle is used in (17). It is not permissible to collocate implicative adverbs with the particle *ba* in imperative and declarative sentences. However, after taking pitch heights into consideration, we notice that while the response with a high pitch particle is inappropriate, a low pitch particle functions perfectly in this case, which suggests that there are two pitch heights for the particle *ba* that might function differently. Chang ignores that there are other possibilities for the use of the particle.

In the following sections, a selection of various proposals of UFPs from the existing literature will be examined and discussed in detail. There are three major types of approaches of investigating these particles, namely maximalist, monosemic minimalist and polysemic minimalist.

2.3 Maximalist illocutionary operators

Chao's (1968) analysis was one of the earliest works of particles in present-day Mandarin. He offers a comprehensive description of the uses of six utterance-final particles[10], illustrating a wide range of illocutionary acts. In his research,

[10]We categorise the original 9 particles in Chao's study into 6 items given some of their homogeneous properties. Take *ba*, for instance. The particle in imperative and that in interrogative are seen as two separate particles, merely occurring in different sentence types. We also replace *ou* with *o* due to the current orthographic rule of Hanyu Pinyin (the alphabet romanisation system for Mandarin).

Chao lists isolated sentences and examines as many features as possible for each particle. The functions of UFPs were as shown in **Table 2.1**.

Table 2.1: Maximalist functions of UFPs

Particles	Features
le	(1) lively enumeration
ma	(1) yes-no question marker (2) pause with hesitation (3) dogmatic assertion
ne	(1) questions in context (2) questions with a specific point (3) deliberate pause (4) mild warning (5) continued state (6) assertion of equaling degree (7) interest in additional information
a	(1) starting a question (2) confirmation question (3) vocative (4) commands (5) exclamation (6) impatient statement (7) reminds (8) warning (9) pause for hearer (10) enumeration
ba	(1) advisative (2) suppositions as alternatives (3) in yes-no question questions (4) in doubtful posed statements
o	(1) warning reminder (2) exclamation

This maximalist approach has successfully provided us a basic understanding of UFPs with a wide selection of potential properties. Maximalism is a homonymic approach, which identifies a great number of multiple senses straight in the lexicon (Hansen, 1998). Such an approach, nevertheless, has some disadvantages as regards the analysis of these particles. The issue has arisen that surrounding contexts are not taken into consideration thoroughly. As context

is a key contributor to pragmatic meaning, some claimed functions in **Table 2.1** are ambiguous if no appropriate surrounding circumstances are given. With detailed context, it is possible to root out the functions that are derived from the context rather than the particle itself. Otherwise, functions can be enumerated ad infinitum. For instance, Chao (1968) asserts the particle *a* can soften the force of an utterance as in the listed functions (1) starting a question, (3) vocative and (8) warning. On the other hand, it can also be used to strengthen the force as in (4) commands, (6) impatient statement and (10) enumeration. There is a lack of explaining where the softening and strengthening effects come from as well as how the meaning is derived under the relevant contextual conditions. The utterances would continue to convey these senses, in a number of cases, even if the UFPs were removed. More context is then required for further analysis of interpretation.

Furthermore, some of the different particles are claimed to have identical illocutionary features, but this might not be the case. In actual use, their claimed functions appear not to be interchangeable. Consider the following examples:

(18) Nǐ hái méi shàngchuáng **a**!
2SG still NEG go-to-bed PART
'Aren't you in bed yet **a**!'

(19) Fàngxuéle **o**!
dismiss-school-PFV PART
'School is out **o**!'.

The particles in examples (18) and (19) are claimed to deliver a mirative mood, where the speaker expresses a sense of wonder towards the utterance. However, it is obvious that the two particles are not interchangeable given that they represent different readings. One can get a reading of 'How can you not know?' in (18) and 'Are you sure about that?' in (19). However, Chao fails to explain these subtleties.

In a similar analytic approach to Chao, Lu (1999) and Liu and colleagues (1999) also identified numerous potential functions of the particles. As expected, this leads to a considerable degree of overlap. Similar illocutionary acts can be

derived from different particles in a specific context. On top of that, it is worth noticing that Liu and colleagues (1999) associate intonation with the distribution of each particle, but these prosodic elements might be originally bound up with the speaker's emotional state. In their study, the pitch variants of UFPs are not regarded as minimal pairs such that every variant differs in only one phonological element and has distinct meaning. Each particle is treated as one variable with various realisations in intonation.

Context has recently been treated as an important factor in other research given the fact that it might help language users understand how UFPs work. Chappell and Peyraube (2015) and Chang (2012) reduce the list of functions and constrain them by considering the interpretation of the particles within different contexts. However, the potential meanings that are derived from UFPs are still a bit too broad in their analysis. For instance, Chappell (1991) models the use of *ma*[11] and claims that the particle can be used to indicate that what the speaker is saying is true, which seems like a universal communicative goal according to Grice's (1975) maxim of quality.

Another example is that Chang (2012) states that the particle *ba* can be used in an imperative sentence to serve as an act of asking politely. The illocutionary force of requesting is thus imposed on the utterance. However, this kind of force appears to be automatically available from the imperative sentence type itself. Without using the particle, the imperative mood can still be expressed readily. Therefore, it is less possible for a maximalist to avoid yielding too many irrelevant functions for UFPs. Moore and Carling (1982) point out that this maximalist fashion could bring about a combinatorial explosion for utterances.

[11]The particle *ma* is spelled out as *me* in Chappell's study and some others, namely Chao (1968), Chu (2009) and Lu (2005). For consistency, *ma* is used throughout the present study.

2.4 Minimalist core meaning

More than half of the existing studies of utterance final particles in Mandarin adopt the minimalist approach, centring on isolating a unitary core meaning[12]. The meaning is usually of an abstract and simplistic nature. The subtle reading of a given particle can always be traced back to different contexts. The interaction between the particle and context is essential to identify the variations in the meaning and use of the particles. Minimalism is regarded as a radically pragmatic monosemy (Hansen, 1998), which aims to be economical in that a universal meaning can be identified that underlies all the uses. This section describes two different fashions, monosemic and polysemic, by which the minimalist examines the use of UFPs.

2.4.1 Monosemic accounts

In the monosemic account, UFPs are claimed to have a universal meaning that will be present in all the uses in various contexts. On top of that, an important idea about speaker and listener interaction is typically invoked by accounts of this kind. These monosemic minimalists attempt to have the audience focus on how the interpretation of utterances works in terms of the viewpoint of both the speaker and listener. Alleton (1981), Li and Thompson (1981), Ljungqvist (2010) and Lin (2014b) involve the idea of interaction between conversation participants in their studies. Various forms of speaker and listener interaction play an important role in the interpretation of the meaning and use of particles. After particles are attached to an utterance, the interactive function can be either **speaker-oriented** or **listener-oriented**. A speaker-wise function expresses the speaker's attitude towards the proposition. By contrast, a listener-wise function indicates the speaker's attitude towards the proposition as well as the speaker's assumption about the listener's attitude towards the proposition (Thoma, 2016). As UFPs are considered part of the class of modal particles, language users make use of them to show how the speaker thinks that the content of the sentence connects

[12]In the existing literature, core meaning does not always refer to a semantic meaning. A number of pragmatic functions can be vaguely named as core meaning as well.

to the common knowledge of their interlocutors. Speaker and listener orientation are then important concepts for UFPs that cannot be ignored.

Alleton (1981) and Li and Thompson (1981) highlight the speaker's intention in using the particles, which is a mental state that represents a commitment to carrying out an action that is likely to happen in time to come. Alleton (1981) suggests that the speaker uses the particle *ne* to activate the listener's participation so as to emphasise the interest of the speaker. When the particle is used in questions, the listener is invited to follow the speaker's reasoning. Without the presence of the particle, questions are considered rude. As for using the particle in statements, it is used to point out a problem under discussion that is not solved yet or to function as a degree indicator. Conversely, Li and Thompson (1981) argue that the particle *ne* is used to indicate the speaker's response to the listener's expectation. That is, the speaker tries to call on the listener to pay attention to the information conveyed by the utterance, in connection with the listener's previous claim. Apart from the particle *ne*, Li and Thompson postulate a unitary pragmatic function for a selection of particles. The core meaning of UFPs they identify are as shown in **Table 2.2**.

Table 2.2: Minimalist functions of UFPs

Particles	Core meaning
le	currently relevant state
ne	response to expectation
ba	solicit agreement
o	friendly warning
a	reduce forcefulness
ma	question

Having one semantic meaning for every and each particle may be economical, but seems to provide little help with understanding and using the particles appropriately given the fact that this unified account of the meaning of UFPs is incomplete. For instance, not only the particle *o* can be used to issue a friendly warning, but, strategically, all the other particles can offer the same

effect with a soft warning tone. Similarly, the description for *a* is insufficient. Lee (2004) offers a different point of view from that of Li and Thompson and argues that *a* can be used not only to reduce the forcefulness of utterance, but also to strengthen the forcefulness when it is used in appropriate contexts. Suppose a conversation takes place between two people in either a harmonious or an unpleasant situation. Consider the following example extracted from Lee (2004):

(20) Māma: Nǐ zěnme méiyǒu chī wán nǐde fàn?
2SG how NEG eat finish 2SG-STR meal

Érzi: Wǒ bù è **ā**.
1SG NEG hungry PART

Mum: How come you didn't eat up your food?

Son: I am not hungry **ā**.

Lee explains that, if this exchange occurs between a mother and a son with an intimate relationship, the tone of the sentence with the particle can be perceived as obedient, which has the effect of reducing the forcefulness of the sentence. On the contrary, if the mother tries to issue a complaint about her son having not finished his meal yet, but the son has clearly stated that he was not hungry, it is likely that the son will reply with a disagreeable attitude to expresses an emphasis of impatience. In this case, the particle reinforces the tone of the utterance to the utmost. Clearly, without taking different contexts into consideration, we may have a difficulty in obtaining an understanding of the appropriate core meaning to posit.

Furthermore, the so-called soliciting agreement function for the particle *ba* in Li and Thompson's study is likely to be derived from the imperative sentence per se. It is reasonable to challenge the claim that the particle *ba* is used to signal the speaker's desire to solicit the approval or agreement from the listener with respect to the requests or commands. When a command or request forms, a first, second or third-person[13] subject is made to suggest an action should be performed. Thus, the 'let us' meaning comes naturally. The

[13]Mandarin has no third person imperative.

contribution of UFPs, therefore, remains puzzling in their analysis. Alleton's and Li and Thompson's formulations only partially reflect an abstract meaning of the particles. While Alleton concentrates on the effect on the listener end, Li and Thompson deal with the motivation of the speaker.

It is important to note that in Li and Thompson's research the particles *le* and *ma* are not used to express either modal or discourse functions. Neither of them are analysed as pragmatic particles. The former is an aspectual particle to indicate that the current situation has been changed, and the latter an interrogative particle to ask questions. These items are simply for grammatical purposes.

In the research of Ljungqvist (2010), particles are said to have a core meaning and simultaneously possess interactive features. Ljungqvist (2010) states that the particle *ba* indicates speaker uncertainty towards the proposition that is expressed. At the same time, the particle signals an invitation towards the listener to confirm the truth of the proposition. The interactive purpose of the particle serves to engage the listener in a conversation. It is said that the real intention of allowing the listener to respond might not be crucial, but the particle is used in order to show politeness (Ljungqvist, 2010).

Pursuing this idea further, Lin (2014b) examines three frequently used UFPs, in Taiwan Mandarin in particular, treating the interaction between interlocutors as the main function. For instance, in line with Li (1999), the particle *a* is used to activate the speaker's own knowledge. It is an explicit signal linking new information with its antecedent in the speaker's own knowledge state. What is more, the particle *e* can be triggered when the speaker believes something in the previous context has been misconceived because some information is missing, and *la* reflects either an explicit or an implicit adjustment. All of these particles can be applied to a selection of limited contexts such as when the speaker engages in storytelling, disagreeing, requesting and so on. However, many of these contextual interpretations seem too specific to cover all of their uses in discourse. As pointed out by König and colleagues (1990), strict minimalism may lead to descriptions that are too general and abstract to be of a practical value. Claiming

a core for UFPs with the strict minimalist approach may be farfetched (Tsao, 2000).

2.4.2 Polysemic accounts

Given the challenges faced by the maximalist and monosemic minimalist accounts, a third alternative merits consideration, namely the polysemic account, which is similar to the monosemic fashion. In the polysemic account, particles are assumed to have different senses that are not just a matter of pragmatics, but are discrete and homonymous. The various senses can be regarded as either extensions from a prototype of a particle or as arising in a chainlike fashion. Henceforth, the minimalist in such approach needs not identify a single meaning that is common to all possible uses of the item. This leaves some room for indeterminacy of meaning which is not practicable on a maximalist account (Hansen, 1998).

Tsao (2000) traces the grammaticalisation of different senses of the particle *ne* from its original core meaning, distinguishing five meanings for it. The particle functions to indicate unchanged state, topic, speaker uncertainty, truncated question and inclusiveness. Unchanged state is claimed to serve as the core meaning, and the others are derived from it. In his diachronic research, Tsao attempts to unearth the basic ideas of the synchronic polysemy with reference to the semantic change of the particle over time. Nonetheless, some of the processing descriptions he claims are ones on which the historical data cannot adjudicate. A big question is how the extended functions are connected to the core and how they are related to one another.

Chu (1998; 2002; 2006; 2009) offers a detailed explanation of UFPs. He focuses his studies on a wide range of particles such as *a*, *ba*, *ma* and *ne*. For the particle *ne*, Chu (2006) treats it as a polyseme with two core properties, the necessity to look back for contrast and the demand for continuation. In addition, there are three primary functions, namely interrogation, reminding and topic marking; and two secondary functions, namely marking truncated question and intense inquiry. These primary and secondary functions are derived from the interaction between the two major properties. In addition, Chu (2009) roots

out irrelevant functions that are claimed for the particle *ne* in the previous research such as speaker uncertainty, idea development and inconclusiveness. He explains that these are simply interpretations of the particle through the interaction between the propositional content and context. Chu's model of the uses of *ne* in terms of its pragmatic-discourse network is as shown in **Figure 2.1**.

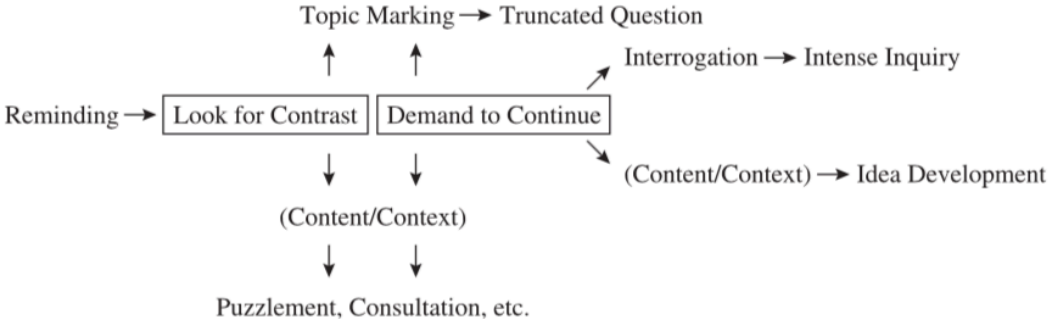

Figure 2.1: Pragmatic-discourse network of *ne*

Chu's analysis enables him to obtain an abstract core rather than a lexical meaning. His description helps us get a comprehensive understanding of the relationship between the core and the extended functions. In his model of *ne*, a wide variety of extended functions can be identified based on the uses of two main properties. However, his way of analysis does not follow the economical approach preferred by other minimalists. Rather, like the maximalists, he identifies numerous meanings corresponding to a single particle. Additionally, it seems that Chu cannot address the issue that the core meaning is sometimes too general to distinguish between different UFPs. Consider the following example by Chu (2009). Two people were chatting about their acquaintances:

(21) Zhāngsān: Nǐ gēn Yú Guān Mǎ Qīng tāmen rènshí duōjiǔle?
2SG with PN PN 3PL know how-long-PFV

Lǐsì: Bù tài jiǔ, méi duōjiǔ, gēn rènshí nǐ shíjiān
NEG too long NEG much-long with know 2SG time

chābùduō.
almost

Zhāngsān: Wǒ hái yǐwéi nǐmen hěn shú **ne**.
1SG yet think 2PL very familiar PART

Zhangsan: How long have you known Yu Guan and Ma Qing?

Lisi: Not too long. Not very long. About as long as I've known you.

Zhangsan: I thought you'd known them for a long time **ne**.

The particle in (21) is suggested to indicate that the speaker wants the listener to participate in the conversation. The demand for continuation in discourse can indeed be a property part of the particle *ne*. This feature, however, exists in other UFPs as well. As a general communicative strategy, it is quite common for the speaker to invite the listener to continue their conversation. Therefore, it is not obvious that this should be considered a distinctive property associated with the particle *ne*. We need to go further in order to identify the distinguishing semantic features of each particle.

With an application of conversation analysis along with interactional linguistics, Wu (2004) describes how Mandarin speakers use particles to exhibit their stance in the unfolding development of action and interaction. Unlike other researchers, she suggests the particle *a* is divided into two variants in line with its prosodic manifestations, one with a flat or slightly high pitch and the other with a notably low pitch. We transcribe them as *ā* and *ǎ* respectively. While *ǎ* occurs in interrogative sentences, *ā* complementarily distributes in non-interrogative sentences. A counter-valence effect seen as a core property from the speaker's perspective can be found when either variant, *ā* or *ǎ*, is attached to the sentence. For instance, the speaker uses the particle to point out there is something problematic from their subjective viewpoint. Suppose a speaker uses *ǎ* as an understanding check to ask his colleague about where their boss is as in (22). The example was extracted from Wu (2004):

(22) Zhāngsān: Nàge lǐbài lǎobǎn bù zài ā.
that week boss NEG exist PART

Lǐsì: Nàge lǐbài lǎobǎn bù zài **ǎ**?
that week boss NEG exist PART

Zhāngsān: Duì ā.
right PART

Lǐsì: A, shénmeshíhou huílái?
PART when come-back

Zhangsan: The boss won't be here that week.

Lisi: The boss won't be here that week **ǎ**?

Zhangsan: That's right.

Lisi: Mmm, when will the boss come back?

It can be straightforward to get the problematic reading if the speaker needs the boss to be present. However, it might be that the enquirer hopes the news to be true. If this was the case, they might be happy because they could finally take some rest for a bit during the boss's absence. The sense of feeling problematic is then reduced to some extent. It appears that, across contexts, the particle *ǎ* is not always being used merely to mark problems.

Even though Wu (2004) claims *ā* distributes only in non-interrogatives as opposed to *ǎ*, we note that *ā* appears in interrogatives as well. We cannot tell them apart simply because they are used in different sentence types. A counterexample we have observed from the data of a press conference is as shown in (23). It relates to a rumour that Ms Hsiuchu Hung might be replaced although she had been nominated as a presidential candidate on behalf of Kuomintang (Chinese Nationalist Party).

(23) Jìzhě : Dǎng zhōngyāng chuánchū, ruò míndiào bù jiā jiù
party centre say if poll NEG good then

bī tuì.
force back

Hóng Xiùzhù: Shì shéi shuōde **ā**? Shì shéi yǒu zhège shēngyīn
FOC who say-STR PART FOC who POSS this voice

ā? Rúguǒ yǒu rén jiǎng zhège huà jiù qǐng
PART if EXT human say this speech then please

tā zhàn chūlái shuō: 'Wǒ jiǎngde'.
3SG stand out say 1SG say-STR

Journalist: The party says you will be replaced if the poll rating is negative.

Hsiuchu Hung: Who said it **ā**? Who has this kind of opinion **ā**? If someone has said such a thing, I ask them to stand out and say: 'I said it'.

As can be seen in Hung's clarifications, the sentences with the high pitch particle in interrogatives are felicitous. Phonosyntactic features do not seem like the key to differentiating the pitch variants. Therefore, the above mentioned issues remain to be solved under this minimalist investigation.

2.5 Common ground management

Interaction between interlocutors plays an important role in the use of UFPs in Mandarin, but a number of pending issues remain to be solved. Merely pointing out that specific particles promote a speaker-oriented or listener-oriented viewpoint does not fully explain how language users interpret them; we need to go further into the analysis in order to illuminate this issue. To that end, let us consider the idea of common ground more carefully. Common ground has been claimed to be an essential contribution of modal particles in German (see Döring, 2016; Karagjosova, 2004; Repp, 2013). It not only involves conversation participants in the discourse, but also relates both the speaker's and listener's knowledge to the context. In this section, we examine what impact the common ground has on Mandarin UFPs.

Common ground, as introduced by Stalnaker (1978), can be viewed as a set of assumptions, which is assumed to be shared between conversation participants but not necessarily to be in the consciousness of the listener at the time of the utterance made (Cook, 1990). In a group, ϕ is part of the common ground if all members agree ϕ to be true for the purpose of the conversation, and all believe that all agree ϕ to be true, and all believe that all believe that all agree ϕ to be true and so on and so forth (Stalnaker, 2002). When no objections are made,

language users make use of assertions as proposals to put content into the common ground and hence to change the context (Döring, 2016).

Repp (2013) points out that modal particles serve as common ground managing operators. Common ground status of the respective propositions can be signalled. This might include checking whether the proposition is already part of the common ground, whether the proposition is expected, or whether the proposition should be added to or be removed from the common ground. In her explanation, conversation participants need not commit to the truth of the proposition. They are allowed to have a low commitment towards a proposition such as saying 'I am not so sure that' or 'It is likely that'. As a result, propositional contents are not put into the common ground right away when a sentence is uttered. Instead, this will happen when the listener offers agreement or is not inclined to object the proposition.

For some discourse-initial uses, the presence of particles is no problem at all even though the relevant proposition seems not to be known. It can be assumed that the context can be accommodated so as to explain this phenomenon (Grosz, 2010a). Grosz suggests that MPs operate on presuppositions and reintroduce the implicit information in the common ground. With particles, the shared knowledge can be reconstructed (Kratzer & Mathewson, 2010).

Haviland and Clark (1974) propose that communication is a collaborative activity between the speaker and listener. Interlocutors pick out the given information that they think the audience knows and the new information that they think the audience does not know, which can be crucial for the comprehenders. Given information may guide the listener to recall the memory, and then new information can be integrated into it. Clark and Brennan (1991) describe conversation as a collective of activities. Shared information will be updated during several pieces of conversation from time to time. Interlocutors attempt to build up what has been said so as to understand the conversation they have. However, because the common ground is exploited in order for communication to take place more efficiently, a failure to correctly apprehend the common ground can result in difficulties in communication.

The idea of common ground looks promising for the explanation of using utterance-final particles, but few studies on Mandarin particles have closely scrutinised it. Lepadat (2017) proposes that the particle *ma* signals the source of information, which is considered to be listener-oriented. The particle serves as an evidential marker to communicate the marked piece of information that is shared with the interlocutors who take part in the conversation. In certain circumstances, the evidential nature can be exploited for particular pragmatic purposes such as contradicting, persuading or expressing dissatisfaction.

On the other hand, Lu (2005) states the speaker utilises UFPs to show their attitudes instead of emotions or feelings; that is, the particles are speaker-oriented. The term attitude in her study refers to the speaker's belief and intention. Lu claims that the speaker makes use of the particle *ma* to express a suspicion that the statement prior to the particle is not true. Furthermore, the utterance with the particle *ma* functions to indicate disagreement.

Similarly, Lu argues that the particle *ba* is used to reflect the speaker's suspicion about the listener's commitment to the state of affairs indicated by the propositional content of a declarative sentence. Furthermore, it refers to the listener's reluctant attitude. However, Lepadat and Lu do not explain in detail how the illocutionary act is derived after the common ground is shaped. This might result in confusion in interpreting UFPs. For instance, this kind of reluctance can be signalled not only by the particle *ba* but also by other particles, or even by sentences that omit particles. Suppose a mother was complaining about her daughter's attitude to doing chores.

(24) Huāmā: Júzi!
PN

Júzi: Duìbùqǐ?
sorry

Huāmā: Wèishéme bǎ lèsè nòngdé mǎndìdōushì ǎ?
why dispose rubbish do-STR all-over-the-floor PART

Hái bù zhīdào yào huàn ge lèsè dài **mā**?
still NEG know need change CL rubbish bag PART

Nǐ dàodǐ nǎodài lǐmiàn dōu zài xiǎng shénme ǎ?
2SG after-all brain inside all PROG think what PART

Júzi: Wǒ běnlái yào huànde.
1SG originally want change-STR

Huāmā: Nà wèishéme zuìhòu méiyǒu huàn?
then why finally NEG change

Júzi: Yīnwèi...
because

Huāmā: Hái yǒu shéme hǎo jiěshìde?
still POSS what good explain-STR

Nǐ wèishéme jiù bù néng bāngmáng zuò yīxiē jiāshì.
2SG why just NEG able help do some chore

Huama: Juzi!

Juzi: Sorry?

Huama: Why did you leave the rubbish all over the floor?

Don't you know you need to change the rubbish bag [**mā**]?

What were you thinking about?

Juzi: I originally tried to change it.

Huama: Then why didn't you do so in the end?

Juzi: [That is] because...

Huama: What explanation is there?

Why can't you help with doing some chores?

In example (24), the presence or absence of *mā* has no impact on the interpretation of the utterance. Even without the particle, Huama was still able to express clearly that she thought her daughter, Juzi, was reluctant to help with the chores. This can easily be gleaned from the context. In summary, as in the case of other studies discussed earlier, some of the claimed functions do not appear to distinguish this specific particle.

It is important to examine how UFPs are processed during the management of the common ground. Wu (2009) offers a comprehensive account

of the particle *ne* with regards to organising the common ground. In his study, there is one core function of the particle that is established in two core properties. The general function of the particle is listener engagement for common ground. Specifically, it is to induce the listener to pay special attention to a discrepancy. As an interactive device, the particle serves to exhibit the speaker's desire to adjust the common ground after the interaction between the speaker and listener takes place. When the speaker senses a difference between the speaker and the listener in the common ground, the speaker will show an attitude towards that disparity.

In this analysis, the particle's two properties are to **mark existence** and to **mark discourse continuation**. The former is to alert the listener to pay attention, and the latter is to signal that the utterance is related to the prior context. However, again, these functions overlap with those of other particles. In summary, examining the common ground is useful in the analysis of UFPs, but existing work has left some questions unanswered. In **Chapter 3**, we will return to this issue and develop the idea that a more sophisticated theory of common ground will help us better understand the subtleties of UFPs' usage.

2.6 Discourse organisation

The studies of discourse particles are part of the general analysis of discourse coherence, which examines how the speaker and listener integrate forms, meanings and actions to make sense of what is being said (Schiffrin, 1987). There is not much research in the existing literature focusing on how UFPs are used to organise the structure of discourse and how they play a role at the level of discourse rather than sentence. The way UFPs interact with the discourse structure is largely unknown. When it comes to the literature on discourse functions, connectives such as *wǒ xiǎng* [I think], *kěshì* [but] and *lǎoshíshuō* [to be honest] in Mandarin are often central topics. Interestingly, modal particles are usually seen as a specific type of DPs, but discourse functions of UFPs are often treated as a by-product of MPs as a trivial function. Even in the field of

discourse research, studies on UFPs sometimes focus more on modal functions rather than discourse functions. For instance, Wu (2004) points out that the particle *a* serves as a discourse particle performing a contrast function, signalling that the speaker thinks the preceding context is deviant. In her analysis, this function, however, seems more closely related to modal functions such as how the speaker manipulates the shared knowledge. The terms MPs and DPs seem to be interchangeable to many researchers.

When we investigate the discourse functions, we wish to keep these separate from modal functions. The ambiguous definitions for both DPs and MPs as mentioned earlier might be the key reason that makes the borderline between them unclear and often confusing. Within the modal perspective, the interactional and organisational parameters of conversation which many UFPs are sensitive to are likely to be disregarded (Luke, 1990). The discourse relationship between preceding and following sentences still appears to fall outside the mainstream research in Mandarin.

Among all the UFPs, the studies of *ne* and *ma* have been comparatively well documented in respect of their discourse functions. Wu (2009) and Chang (2012) claim the discourse function of the particle *ne* can signal that the question with the attached particle is related to the preceding discourse. In other words, the particle is used to associate an utterance with its previous context. In their investigations, it is quite unclear how such a function is relevant to the particle. In Wu's analysis (2009), it is pledged that when the particle is used, there is a link to connect the utterance to the speaker's epistemic state, which is important for interpreting the meaning of the particle. When the link cannot be signalled, the listener would assume what is not part of shared knowledge between the interlocutors, as we might observe in soliloquy and pondering situations. Consider the following example:

(25) Zhèmeshuō, tā zài zhè jǐ tiān jiù zǒu, jiùjìng dào
how-say 3SG further this CL day right-away leave exactly arrive
shénme dìfāng qù **ne**?
what place go PART
'So, he is leaving any day soon. Where exactly is he going then **ne**?'

The speaker in (25) used the particle *ne* to form a question to express that he would like to know where his friend is going. By uttering 'Where is he going then?', the speaker points out this is a relevant question to 'So, he is leaving any day soon.' However, this analysis appears far-fetched. Without using the particle *ne*, the sense of relatedness still exists. It is natural for a speaker to ask a relevant question towards its previous context without using the particle. A similar issue arises in Chang's analysis (2012) as in example (26). A teacher was complaining about his students' idleness.

(26) Xiànzài hěn hùn, kěshì xià xuéqí **ne**?
now very idle but down semester PART
'[They are] idling now, but [what would happen] next semester **ne**?'

Syntactically, the particle *ne* turns the declarative sentence into a question. That being the case, it seems reasonable to expect that the following question should relate to its prior context, unless there is a specific reason why this should not be so. Further evidence is therefore required to shore up the claim of Wu and Chang that the particle conveys the relatedness between sentences.

In a similar way, Lepadat (2017) claims *ma* to be a device to increase the contextual relevance between sentences and to give coherence to the text. When the speaker associates the current utterance with its preceding remarks, the effort to process the information may decrease gradually. However, it is likely that coherence is a fundamental feature to obtain when interlocutors are communicating. Once again, this sense may be too general to be characteristic of any specific UFPs. As an alternative approach, Chappell (1991) and Chu (2002) provide a semantic meaning so as to interpret the use of UFPs in discourse. In Chappell's analysis (1991), a logical link between two propositions would be signalled by *mǎ*. The particle indicates that one is the obvious consequence of the other, and is typically found in explanatory contexts as in example (27).

(27) Yīnwèi xīnhuāng **mǎ**, tā tōule dōngxī.
because upset PART 3SG steal-PFV stuff
'Because he was feeling upset **mǎ**, he'd stolen something.'

The utterance with *mǎ* is an explanation of the stealing. Chu (2002) supports the

obviousness idea and asserts that the key function of the discourse particle *mǎ* is to reflect that the propositional content of an utterance is obvious. However, Chu and Chappell do not examine whether there are other possibilities for other types of discourse relations and whether there are constraints on certain relations. As linguistic cues can be an essential factor to build up coherence and to guide the interpretation of a discourse (Döring, 2016), there might be some room to further develop our understanding of the relationship between UFPs and coherence relations.

2.7 Experiment: Attitudes towards utterances with the presence of ā

This section presents the results of an experiment which aimed to examine whether the meanings that have been associated with Mandarin UFPs are broadly stable across contexts. To date, there is a paucity of experimental work on utterance final particles in Mandarin. While experimental work on MPs has been conducted in languages such as German, there is a gap in the literature on Mandarin UFPs. Furthermore, there are significant challenges associated with the interpretation of UFPs created, in part, by the subtle nature of the particles. Quantitative studies can offer a complementary perspective to introspective judgements, and in this case may help us adjudicate between apparently conflicting claims in the existing literature based on introspection.

Previously, Wu (2004) and Lu (2005) stated that the fundamental function of the particle *a* is to convey the speaker's certitude that something is true which is contrary to the opinion of the listener, representing a conflict of opinions about the truth of a statement. The sense of surprise comes along as part of the speaker's attitude. Chu (2009) states that the particle is utilised to inform the listener that they should address the speaker's concerns. The particle acts as a verbal challenge, inviting debate and discussion. Among other authors, there is a convergence of opinions centring on the belief that the particle operates as a concern marker in conversations (see Lin, 2014b). The analysis of Liu and

colleagues (1999) differs from that of Wu (2004) and Lu (2005). They suggest the particle is used to show speaker uncertainty towards the content of the sentence. In other words, the level of the speaker's commitment decreases when the particle is applied. This is a double-edged sword. If the particle serves as an assertive marker, the interpretation would suggest the relevance of speaker certainty. The speaker would attempt to make the listener believe that what the speaker is saying is true. In contrast, a higher degree of speaker certainty will be projected when the speaker states a fact or belief. Finally, Badan and Cheng (2015) point out that the presence of the particle *a* highlights the exclamative reading towards the content of the clause. The use of the particle is to encode the speaker's surprise. Based on these studies, then, we can identify with four major properties that have been associated with the particle: *certain*, *concerned*, *dubious* and *surprised*. It is clear that some of the previously claimed properties are contradictory to one another such as certainty and dubiety. This raises the question of, if any, which of these core meanings are adjudged by listener to be associated with uses of the particle *a*.

To address these limitations and further illuminate our understanding of the core meaning of UFPs, we designed an experiment that aimed to test two key aspects. First, we aimed to test which senses are consistently associated with UFP *ā*, the high tone variant of the particle *a*. Second, we examined whether the presence of the particle has an impact on the utterance meaning.

2.7.1 Methods

In this task, native Mandarin speakers (n = 45) were recruited from social media to make judgments on the meaning of the particle *ā*. On the basis of hearing a series of recorded sentences, participants were required to rate on a scale from completely disagree to completely agree on the question of whether or not the chosen terms fit for the core property of the particle. All the subjects were from the same state so as to root out the possibility that the particle might be used differently due to regional differences. A detailed explanation of the methods follows.

2.7.1.1 Participants

A total of 45 adult participants took part in this experiment, and 25 of them were male. They were all self-declared Mandarin native speakers who had been raised in Taiwan, aged between 21 and 50 years. The mean age was 31.73. We did not exclude people on the basis of their educational background to ensure the study represented a wide variety of population that speak Mandarin.

2.7.1.2 Material

The experiment took the form of a between-subject design with half subjects were randomly exposed to one level of the independent variable, and the other half were to another level of the independent variable. 12 pairs of sentences that read at normal rate of speech (around 110 words per minute) by a male native Mandarin speaker were recorded for experimental material. The only difference between the pair of recorded sentences was the presence or absence of a particle. Specifically, each pair of the sentences contains one sentence with the particle *ā* and the other without the particle. Participants would read the sentence with the particle and had one version clipped. A choice of five selected items were presented with every sentence in both targeted or controlled sentences. Based on the previous claims, we asked participants to judge whether the sentences expressed meanings that were *certain*, *concerned*, *dubious* and *surprised*. As a baseline, we included the option of *happy*, which is not theorised to be associated with the particle.

Participants were required to rate on a slider whether they agreed or disagreed that the speaker was certain, happy, concerned, dubious, or surprised. The scale was not shown to the participants: zero corresponded to minimum agreement, and 100 to maximum agreement, as shown in **Figure 2.2**. 24 sentences were evenly presented in two blocks, and they were in a randomised order in each block. No preceding context were provided for each sentence as it could be an influencing factor for the participants to decide the central meaning of the particle. Hence, this design allows us to examine whether the reading that is derived out of the given items in the absence of context corresponds to the

hypothesised interpretations. Sample materials are displayed in Appendix.

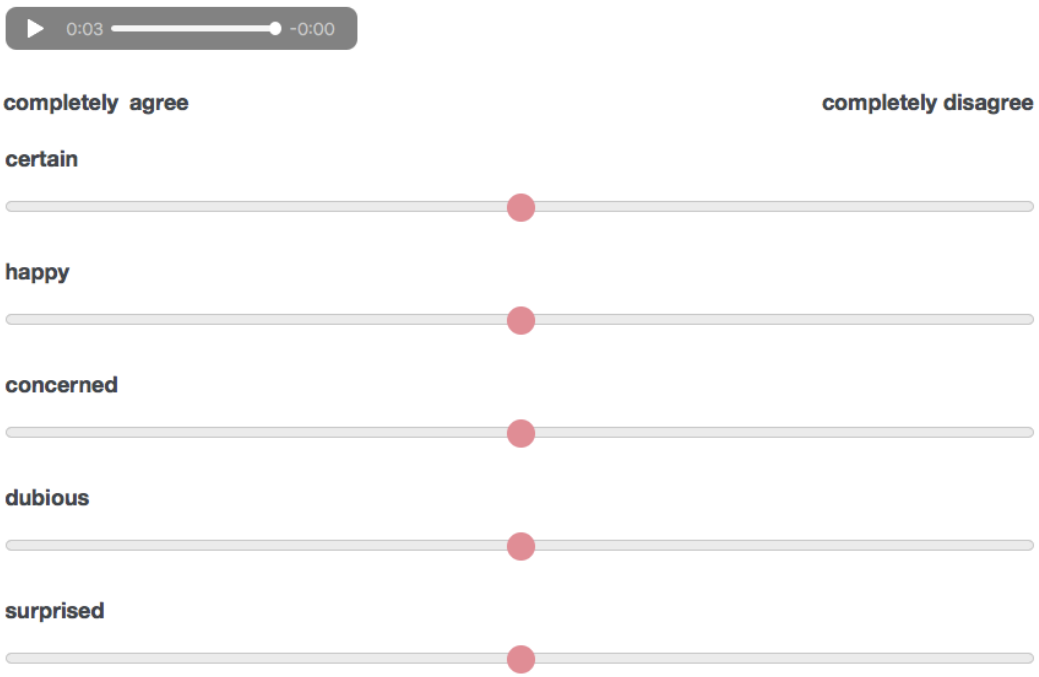

Figure 2.2: Display for the experiment ā

2.7.1.3 Procedure

Participants were required to do the experiment in a quiet place. Before the main sections took place, they were introduced to a set of practice tests. One recorded sentence was presented at a time. After hearing each sentence, participants were asked to rate their interpretations of the speaker's intention using the sliders. Sentences were randomised in two blocks. Participants within each block were randomly assigned. Participants were not allowed to go back to the previous section so as to prevent them from changing their response as a result of listening to further sentences. This was in order to isolate participants' initial, unbiased reaction to the particle. The experiment typically lasted for approximately 15 minutes. There was no time limit.

2.7.2 Results

None of the recorded data were excluded given that participants showed no sign of not paying attention in the experiment. The mean proportions of the acceptance rate for the given items were as shown in **Figure 2.3**, which describes how the attitude of sentences change as a result of the inclusion and exclusion of *ā*. It shows the preferred choice of the participants among five various categories of the speaker's attitude. The box plots illustrated in the present study were produced in Team (2018) with a **psych** package by Revelle (2018).

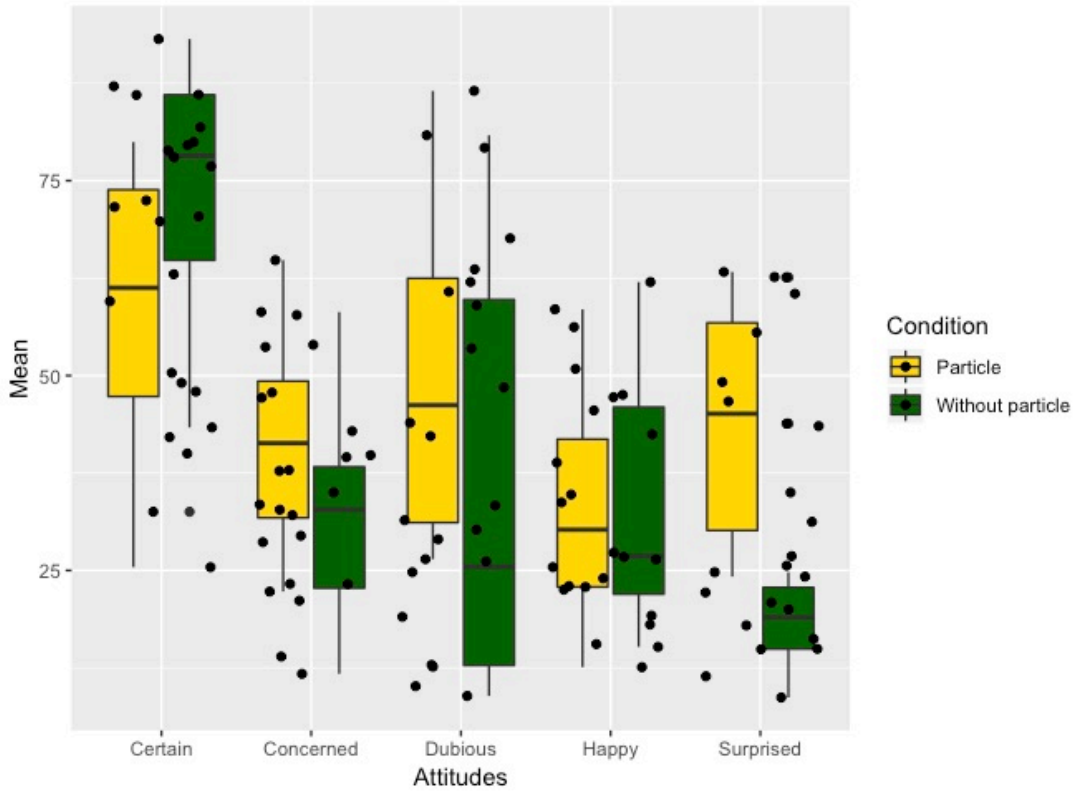

Figure 2.3: Mean scores of the speaker's attitudes towards ā

While the mean score of *certain*, without using *ā*, is high, it is comparatively low for that of *dubious*. However, this is not an obvious case when the particle is used. With the presence of the particle, the mean proportions for *certain* is 59.04. It is slightly lower, 49.95, for *dubious*. The mean of *concerned*, *dubious* and *surprised* are approximately towards 50 when the particle is used. There were no mean scores higher than 65 with the presence of the particle. As

can be seen, there is a large number of outliers. The outliers for either using or leaving out the particle among the given items are too obvious to be ignored for the statistical analysis. The results are scattered, indicating clear inconsistencies over the judgements for both with and without *ā*. Except in the category of *certain*, the mean proportions of the other categories were comparatively low. It is worth noticing that the mean score of *certain* without the particle is higher than its corresponding equivalent.

An independent samples t-test was computed to determine whether there were significant differences between the presence and absence of *ā* in terms of the five aspects in question: *certain*, *concerned*, *dubious*, *happy* and *surprised*. Of these, only the category of surprised showed a significant effect of the particle (t (22) = 3.33, $p < .05$, two tailed). Despite its significant difference, the mean score for surprised was only 43.69 when *ā* was present. Considering the individual sentences, 6 of the 12 demonstrated a significant effect of particle on surprise. On certainty, concern and dubiety, it was between 3 and 5. No significant differences were found in all 12 pairs of sentences regarding the judgement of *happy*, as expected.

2.7.3 Discussion

The results of this experiment indicate that none of the core meanings are strongly associated with the particle *ā* across contexts, namely *certain*, *concerned*, *dubious* and *surprised*. The scores of the participants' judgements were scattered and inconsistent, which makes it difficult to pin down whether there is a dominant core for the particle among the given items. The ratings of the five given aspects do not systematically fall into any side of the scale when the particle is present. Therefore, the results of the experiment are not in favour of claiming any of the meanings in question to be the core for *ā*.

Even though significant differences that were found in *surprised*, not the case across other categories, we still cannot come to a conclusion to name *surprised* a core property for the particle. According to the data, the listener can sometimes get the *surprised* meaning under specific conditions. Most of the

time, the particle collocates with intensifiers. The words, such as *duōme* [how], *zhème* [very] and *rúcǐ* [so], make no contribution to the propositional meaning of a sentence but serve to enhance and give additional emotional context to the word it modifies. Further analysis is thus required before we can suggest that *surprised* can be an important extension that is derived from the particle rather than the dominant interpretation in default. From a crosslinguistic perspective, our findings are consistent with other languages that mirativity can be gained with the presence of particles (see Abdiu, 2014; Liosis, 2010; Namgyal, 2001; Rett, 2011). Nevertheless, how such functions are processed when the particle is present requires further analysis.

Furthermore, it is not uncommon to mistake a meaning that originally belongs to the sentence itself for a so-called dominant connotation. For instance, the ratings of *certain* fall on the positive side of the scale when the particle is used in declarative sentences. However, based on Grice's (1975) maxim of quality, a speaker should attempt to say what they believe is true and do not say that for which they lack adequate evidence. It is natural to consider that conversation participants avoid making statements concerning matters about which they are not certain while making exchanges. Therefore, the level of speaker certainty goes up when language users are making statements. It is interesting to note that the level of speaker certainty when $\bar{a}$ is absent in a statement is marginally higher than when $\bar{a}$ is present. This may suggest that the particle has little impact on comprehenders' perception of speaker certainty. Otherwise, the level of speaker certainty should be higher than that without using the particle. On the face of it, our findings are inconsistent with the belief that the particle acts as a certainty marker.

Given that it is risky to claim that UFPs have an explicitly semantic meaning, the current approach leads us to a great challenge to determine the major property, which is shown in the data of the experiment. In such a fashion, we could end up with a lengthy and confusing list. Without doubt, it is a laborious task to name a core. Excluding other potential meanings is simply not easy under a semantic analysis.

The findings of the experimental study suggest that the current approaches of investigating UFPs are insufficient to pin down a dominant core or to tell apart the effect of a particle's use or omission used at the end of a sentence. The claimed meanings are usually either too general to be helpful, or too specific to avoid counterexamples. To address this issue satisfactorily, we need to consider the roles of illocutionary acts, common ground and discourse relations in contributing to the interpretation of UFPs. Therefore, further research is required to examine how UFPs are processed to reach the communicative goals of interlocutors.

2.8 Chapter summary

In this chapter, we have considered the properties of UFPs from a wide variety of perspectives. In order to better understand their nature, we first discussed the concepts of MPs and DPs on the basis that UFPs have been claimed in the literature to be either one of them and that drawing a borderline between MPs and DPs is often problematic. On the basis of their characteristics, UFPs may be a subcategory of MPs.

We then examined previous studies of UFPs in Mandarin from a maximalist and minimalist perspective. On the one hand, the maximalist approach is likely to yield too many irrelevant functions for these particles that are derived from the context. On the other hand, a lot of contextual interpretations that are suggested by the minimalist approach seem too specific to cover all of the uses in the discourse when the particles are present.

Common ground management and discourse organisation have rarely been associated with the use of UFPs in the existing literature. Nonetheless, crosslinguistic research demonstrates that these notions may be useful for our analysis of these notoriously ambiguous particles. In the following chapter, relevant mechanisms and technical notions will be discussed.

Finally, we presented an experiment to test whether the candidate meanings ascribed to UFPs in the literature are stable across uses, with particular reference to the particle. The results show that the sense of *surprised* appears

comparatively to be more relevant to the use of the particle $\bar{a}$. This quantitative study offers us an additional perspective on whether these claimed senses in the literature are supported by the general audience.

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Chapter 3

Building contexts in the discourse

As we have examined the characteristics of Mandarin utterance-final particles (UFPs) in the previous chapter, we know that context matters. In general, to be on the same page with others can sometimes be mentally taxing unless sufficient context is provided or the parties involved have things in common with one another. When people exchange remarks in a group, it is likely to be easier to take someone's point if a person has a similar background to their group members (Clark, 1996). Onlookers, on the other hand, who are not part of the community may find certain expressions obscure. They might even reach an interpretive impasse as a result of confusing or ambiguous readings. That is, some words, phrases and sentences can take special meanings among particular groups of people such as families, friends and people who know each other well (Clark & Marshall, 1981). For example, people in the UK may assume that every Briton knows the saying 'Bob's your uncle' to roughly mean 'and there it is'. It might have nothing to do with one's having an uncle who is named Bob. Therefore, in order to make sense of what others are truly saying, a shared experience needs to be built simultaneously as we continue our conversation.

As content communicators, we have to associate our minds with that of others through the shared experience. By doing so, we can then make our conversation flow. However, from another perspective, as pointed out by Levinson (2000), we have to exploit common ground because we have narrow bandwidth for communication. Some of the obscurity to an overhearer arises simply because

we are so accustomed to exploiting common ground.

In a number of languages such as German, Russian, Telugu, Japanese and Mandarin, language users can make use of function words to colour various types of attitudinal expressions, either non-modalised as shown in (28) or modalised as shown in (29), so as to smooth the way for the ongoing communication and to shape the common ground at the same time.

(28) Hālì zuówǎn shǒucìliàngxiàng shí, fēicháng jiāolǜ **bǎ**?
PN last-night debut time very anxious PART
'When Harry made his debut last night, he was very anxious **bǎ**?'

(29) Hālì zuówǎn shǒucìliàngxiàng shí, **yīdìng** fēicháng jiāolǜ **bǎ**?
PN last-night debut time must very anxious PART
'When Harry made his debut last night, he **must** be very anxious **bǎ**?'

Non-modalised or factual statements as in (28) are made to assert the world under discussion (Sadock, 1974). Conversely, modal statements as in (29) are claims about possible scenarios that are compatible with the world under discussion. These modal statements are not made to assert the facts about the actual world straightforwardly, but they refer to what might possibly be the case instead (Kratzer, 2012).

UFPs are a good example of a linguistic device that is used to facilitate the understanding of a precise speaker meaning for the listener. Listeners and readers rely on them to listen and read between the lines rather than relying entirely on the literal meaning the sentences offer. It is worth noticing that viewers can also 'read between the lines' through the help of particles in sign language (Herrmann, 2013). Generally, UFPs are not merely attached to the end of a sentence to enhance its literal meaning. They can be used to provide more context to convey the bigger picture of a situation. If we omit such particles, it generally results in a loss of meaning in the discourse. Unfortunately, as discussed earlier in the preceding chapter, these commonly used particles in everyday communication are often considered a trivial by-product in human language and have received relatively sparse attention.

In this chapter, we examine how particles interact with common ground

and discourse context when a series of ongoing negotiations take place. From a crosslinguistic point of view, these particles are considered to be an indicator of common ground, illustrating the status of respective propositions. Besides, we investigate how the speaker selects a particular particle on the basis of its sentence and context in order to show their intentions and how the listener reconstructs the intentions of the speaker on the basis of their knowledge of how the particle is used in the interactive discourse. It is important for conprehenders to figure out what is intended for them to infer when discourse units are structured as a whole. To better understand how coherence relations are mentally represented in the human mind, we have to look into how such particles are interpreted in the system of communication.

3.1 Finding common ground with linguistic cues

The underlying knowledge that helps the interlocutors to make assumptions for the purpose of communicating smoothly and successfully is called common ground. The technical notion of common ground was introduced by Stalnaker (1978) and was based on other constructs in the literature such as common knowledge (see Lewis, 1969), mutual knowledge (see Schiffer, 1972) and shared knowledge (see Karttunen, 1977). These terms are often used virtually interchangeably when referring to the broad nature of common ground. More often than not, the more one can assume things to be part of it, the less effort needs to be made to express them directly in conversation.

By constantly building common ground, a speaker is able to dispense with much unnecessary detail, for instance when producing referring expressions. In the characterisations of Clark and Marshall (1981), they elaborate on how the speaker deliberately chooses their referring expressions in order to find common ground between their discourse participants. Suppose there were a festival of Marx Brothers films taking place at the Roxy, with only one film showing each night for a week. Consider the following scenario in which a conversation takes place between Ann and Bob:

(30) On Wednesday morning, Ann reads the early edition of the newspaper which says that *Monkey Business* is playing that night. Later, she sees Bob and asks, 'Have you ever seen **the movie showing at the Roxy tonight**?'

During the communicative process, the definite referring expression Ann uses presupposes some shared beliefs on the part of both Ann and Bob, the speaker and the listener as illustrated in (30). In the light of the possibility of accommodation, the use of this referring expression to pick out the film *Monkey Business* presumes that it is common ground that precisely one film is playing at the Roxy tonight, and that film is *Monkey Business*. With these conditions met, what the speaker utters can make sense to the listener.

By appeal to the common ground, one can talk about things outside the here and now without recapitulating the background laboriously. Moreover, speakers can sometimes produce utterances that appear to rely on common ground when the facts in question are actually not part of it. For example, in a world where Bob does not even know that there is a movie showing tonight, this utterance tells him that there is. In this case, he might reply 'What movie is that?' to prompt Ann for the missing information. The definite reference in question still remains felicitous given the fact that the listener accommodates the truth of the presupposition so as to make sense of the speaker's contribution.

To make or to interpret definite references, interlocutors have to assess certain shared knowledge in the common ground. However, on some construals of common ground, this knowledge appears to constitute an infinite number of propositions. The shared beliefs can comprise an indefinitely long list. An issue arises that how language users assess the infinite knowledge in a finite amount of time, which is called the **mutual knowledge paradox** by Clark and Marshall (1981).

The use of co-presence heuristics is suggested be one of the solutions to deal with the paradox in question under most circumstances. In general, the speaker can search their memory for evidence of the things they are referring to for which they have been co-present with the listener physically, linguistically or indirectly.

On top of that, they can search their memory for evidence that the things are universally known within a community the speaker and listener mutually know they belong to. For example, when one is physically co-present with someone else, they can employ a demonstrative such as *this* and *that* to indicate the entities being referred to and to differentiate those entities from others.

Note that building up the common ground is indeed not exclusive to verbal communicative strategies. We can also use non-verbal techniques at our disposal to build more of it. As pointed out by Gergle and colleagues (2013), visual cues can provide evidence of mutual understanding to support the conversation surrounding a joint activity, where interlocutors take the collaborative actions (Clark, 1996). Imagine you were physically present in a classroom with a friend who was helping you move a desk. Based on your friend's tired facial expression, you may get a possible reading that the desk seems to weigh a ton, and a hand is urgently needed. Likewise, you may need to clarify your verbal instruction after seeing your friend moving in a direction that suggested he misunderstood what you said about where to put the desk. With such visual information, you can decide to elaborate your previous statements to offer further clarification. Therefore, the visual cues can be helpful to reveal the common ground and add new things to it. The common ground can thus work as a facilitator to help us to take actions more efficiently.

As can be seen, when people converse, there are various cues, linguistic and non-linguistic, which can help interlocutors to get a better picture about how the speaker feels and what the speaker means (see also Ahn & Yap, 2013). With them, the listener is able to derive a non-linguistic meaning from an utterance, which arises independently from its linguistic use, its literal meaning in particular (Fraser, 1999; Jucker & Ziv, 1998). To put it differently, a good number of intended meanings can be readily picked up by the listener from the contextually enriched utterances through the application of assistive devices. Nevertheless, the existing literature has paid less attention to the issues of grounding in face-to-face conversation when the cues that are function words such as particles are present.

To develop a more complete picture of the role of linguistic cues (in

particular, Mandarin UFPs) in discourse, we would like to dig further into the phenomena of linguistic cues that emerge from discourse contexts. Before we continue our investigation of the impact of UFPs on the context between discourse participants, let us try to define the notion of common ground more precisely.

3.2 The notion of common ground

The term common ground has been criticised from time to time for its fairly imprecise word sense. Its name is associated with a place in which conversation participants store a record of data in terms of their shared opinions or interests, but its meaning fails to illuminate how interlocutors in conversation effortlessly puzzle out the communication (see Bross, 2012; Koschmann & LeBaron, 2003). It thus constitutes a barrier to our understanding of the relationship between the use of particles and the management of common ground. In this section, we carefully examine what the common ground is before we further our discussion about how particles in Mandarin facilitate our interpretation of the ongoing communication.

As pointed out by Stalnaker (1978), the technical notion of common ground is a set of beliefs and intentions in a context, which is shared by discourse participants. The notion is further defined in the following way:

> It is common ground that ϕ in a group if all members accept, for the purpose of the conversation, that ϕ, and all believe that all accept that ϕ, and all believe that all believe that all accept that ϕ, [et cetera] (Stalnaker, 2002, p. 716).

Based on Stalnaker's observation, there is a wide variety of information provided regularly within a specific speech context for the construction of the common ground. Building up the common ground is a constant and mutual process that requires all participants in the ongoing discourse, both the speaker and listener, to share the knowledge. This shared knowledge must be available for all the interlocutors in the course of conversation. Even if a speaker intends to lie, they need to believe the information required for the interpretation of their lies will be

in the common ground. In general, as pointed out by Stalnaker (2008), assertions serve as proposals to add propositional contents to the common ground provided that there are no objections by interlocutors.

During conversation, interlocutors activate a set of propositions at every turn. If the set is mutually accepted by conversation participants, it will then be stored and labelled as common ground (Lewis, 1979). The common ground is conventionally considered a dynamic data collection since the propositions may be updated from time to time for the needs of interlocutors (Zimmermann, 2009). In the exchange of remarks, propositions are constantly being added to or removed from the common ground. Propositions can also be modified and then be put on the waiting list for an update.

With experimental evidence, Bohn and colleagues (2019) demonstrate that the common ground can be used by both adults and children to make pragmatic inferences. Their results show that the listener relies on contextual information to reconstruct the intended meaning of an utterance over the course of a conversation. Participants in the experiments, children between 3 and 5 years of age (n = 243) and adults (n = 694), selected targeted objects given the fact that they inferred the referent of the utterance through considering prior communicative interactions with the speaker. A probabilistic model of conversational reasoning was used to generate quantitative predictions. The experiments suggest the listener makes pragmatic inferences based on the speaker-specific expectations. In general, to infer the intended meaning of an utterance, the listener has to integrate their knowledge of communicative conventions, such as semantics and syntax, with social expectations about their interlocutors.

An **integration model** was thus introduced by Bohn and colleagues (2019), which assumes that the informativeness of an utterance relies on the common ground shared between discourse participants. When the listener computes the utterance, they suppose that the speaker would take the common ground as a starting point. This effect is claimed to be age-related. As children get older, they have a stronger expectation that the speaker will be informative. By virtue of the fact that we have limited space to deal with the use of Mandarin

UFPs, we will refrain from delving further into the debate on the developmental change of integrating multiple sources of information by using pragmatic cues. However, this study of pragmatic inference presents a basic overview of how the common ground plays a crucial role in comprehending the speaker's intentions.

3.3 Modal particles operate on common ground

In the existing studies, modal particles (MPs) are said to function as common ground operators. Recall that MPs are used to either indicate how the speaker thinks the propositional content of the sentence relates to the common ground or to add modality to the meaning of the sentence. As can be seen, the concept of common ground management plays a crucial role in interpreting the use of MPs (see Krifka, 2019). Please refer to **Chapter 2** for more information on the characteristics of MPs.

Given that most of the research with regard to the operation of particles on discourse contexts revolves around German MPs, we would like to examine the MPs from a crosslinguistic point of view. Therefore, we now turn to the common ground management and modal properties of German MPs, which will benefit our analysis of Mandarin UFPs. Note that there are two types of MPs, whose distribution varies in different languages. They can occur either in the middle field or in the final field of an utterance[14] and are often confused with adverbs. German MPs are MPs in the middle field and Mandarin UFPs are MPs in the final field.

3.3.1 Belief system and conveyed meaning

Karagjosova (2004) provides a detailed description of the common ground model and further explains the functions of MPs in the middle field, which can be seen as a minimalist approach that aims to offer a universal meaning to cover the uses in every aspect of situations as discussed in **Section 2.4**. In line with other proposals in the literature, Karagjosova claims that the speaker expresses their

[14]So far, we have no evidence that there are MPs occurring in the initial field of an utterance.

attitudes towards the common ground when the MPs are used.

There are three essential components in her formal account of the common ground model. First, there can be different statuses of beliefs, in the individual belief system of a discourse participant. Second, the conveyed meaning of an utterance is made up of what is asserted, what is presupposed and what is implicated. Last, the speaker's intentions can be either reflected in the sentence type and speech act or in the discourse structure.

Based on the work of Wassermann (2000) on **resource-bounded belief revision**, Karagjosova (2004) argues that the belief states of human agents[15] can be structured to model a particular status of an agent's belief. In her delineation, beliefs that are indicated by MPs concern the cognitive status of propositional contents. For the purpose of showing the precise status of the propositional contents in the beliefs of interlocutors, a model which can differentiate different kinds of beliefs is needed. In general, beliefs can be represented explicitly or implicitly. The set of explicit beliefs is regarded as a belief base that are explicitly mentioned in the discourse, which is a finite set of formulae to exhibit an agent's basic beliefs. On the other hand, implicit beliefs are the set of beliefs that are not explicitly mentioned in the discourse, which can be inferred from utterances. Furthermore, beliefs can also be either active or inactive, which is called salient and non-salient by Döring (2016). The beliefs are considered active if they are currently accessible. If an agent is unaware of something but believes it, it is then part of their inactive beliefs. That is, when a person remembers something, they have access to this active information. On the other hand, when they forget something, they currently do not have access to this inactive information.

Beliefs that the agent is considering for acceptance are also covered in the common ground model. Before the agent decides to fully accept all of the beliefs in question, they are seen as provisional beliefs. The notion of provisional beliefs captures the idea that new information is not accepted immediately by the agent. Instead, the agent first checks the compatibility of the new information with their

[15]Wassermann (2000) adopts the definition in her research that 'an agent may be a human being, a computer program or any kind of system to which one can ascribe beliefs and from which one would expect rational reactions'.

established beliefs. Overall, this model reflects the fact that the capacities of human cognition are limited, which is in line with the description of Levinson (2000). When the new information is not consistent with what an agent believes, the agent might have to update the old beliefs with the new ones or maintain their old ones and reject the new ones. Therefore, the belief states of an agent change constantly. They are dynamic.

To model how MPs contribute to the utterance meaning, Karagjosova (2004) formalises the notion of conveyed meaning of utterance to check how the new input in dialogue is structured. This was adopted from some parts of Gazdar's (1979) work, where he models the meaning of utterance with reference to entailments, presuppositions and implicatures so as to offer a solution to the projection problem of presuppositions. Karagjosova argues that these three elements represent various parts of the new input and make up the provisional beliefs that an agent receives. In her delineation, the representation of conveyed meaning allows one to explain the contribution of MPs to utterance meaning.

The conveyed meaning of an utterance is composed of what is asserted, presupposed and implicated by the utterance. When the speaker produces an utterance, the conveyed meaning reflects their actively explicit beliefs. This conveyed meaning forms a provisional belief of the listener. That is, the listener draws inferences about what the speaker conveys and then decides whether or not they are happy to accept the information. Once the information is mutually accepted, it becomes part of the common beliefs between the speaker and the listener. Note that Karagjosova treats common beliefs in her research as shared knowledge, and she refers the common ground as a place in which **dialogue history** is stored.

The third element of Karagjosova's (2004) model looks at the intentions of the speaker that are reflected by the sentence type of an utterance and by the function of an utterance in the discourse. On the basis of the work on speech acts from Searle (1969), Karagjosova suggests that MPs serve as speech act operators and reflect the beliefs of the speaker. She further explains that the speaker's communicative intentions can be reflected by the discourse structure in

three types of **higher level discourse acts** (HLDAs), which are realised by the utterance.

The first type of HLDAs which MPs are used to perform are **rhetorical acts**. These indicate the goals that the speaker wishes to achieve with the utterance with respect to the argumentative or rhetorical structure of discourse. The rhetorical HLDAs correspond to **argumentation acts** from Traum (1994) and **rhetorical relations** from Mann and Thompson (1988). In Karagjosova's model, the rhetorical acts are seen as **argue** and **background**. More specifically, the speaker either attempts to convince the listener that the propositional content holds or highlights the status of the proposition as an element of the common beliefs shared between discourse participants.

As for the second type, MPs contribute to a particular role of their carrier utterance by realising **dialogue-specific acts** such as accept, reject, confirm and acknowledge that are seen as **dialogue acts** in the literature (see McTear et al., 2016; Stolcke et al., 2000). Karajosova proposes that the dialogue-specific HLDAs should be separated from the traditional speech acts given that the HLDAs operate in the discourse, whereas the latter function more locally.

For the last type of HLDAs, MPs convey **meta-communicative instructions** to the listener. The meta-communicative HLDAs have an interaction-regulating function to indicate that the speaker wants either to correct a previous idea of what is commonly believed or to check whether or not a state of affairs is still commonly believed, which can be called **meta-communicative correction** and **meta-communicative check** respectively. Such meta-communicative instructions are seen as a means to interrogate the cognitive status of the propositional contents.

Note that all of the functions of HLDAs are context-dependent. It is important to know who the speaker is from the prior utterance so as to determine the HLDAs of the utterance. For instance, if the targeted and preceding utterances are from the same speaker in the discourse, the HLDA cannot be meta-communicative correction. If the prior linguistic context does not offer evidence for the speaker to believe that the propositional content is not active common

knowledge, the HLDA can function as background but not meta-communicative correction.

By means of the framework we have discussed so far, Karagjosova (2004) specifies the basic meanings of some German MPs. For example, the MP *doch* indicates the belief of the speaker that the propositional content is explicit but not active common knowledge of the speaker and listener. Furthermore, the HLDA of *doch* is meta-communicative correction when the utterance is either assertive or directive. Its HLDA is otherwise meta-communicative check when the utterance is erotetic[16]. The MP *ja*, on the other hand, indicates the belief of the speaker that the propositional content is active common knowledge of the speaker and listener. The HLDA of *ja* is background when the propositional content has been mentioned in the previous context, whereas it is background while not being mentioned. Based on her analysis, MPs contribute to the utterance by modifying the illocutionary acts and offering additional properties. In general, Karagjosova's common ground model covers the basic meanings of German MPs, the speaker's intentions and the contextual restrictions in the discourse.

3.3.2 An indicator of common ground

The work of Karagjosova (2004) shows that considering the state of the common ground is a useful way to account for the use of MPs. Similarly, Repp (2013) proposes that MPs as well as other conversational operators such as VERUM (see Romero & Han, 2004), to emphasise the expression of truth of a proposition, and FALSUM (see Repp, 2009), to convey a speaker bias toward the truth, function as common ground managing operators. In her observation, MPs have an impact on the truth-conditional meaning of a proposition, which is different from Karagjosova's approach that MPs do not contribute to the truth-conditions of a sentence. Note that, as pointed out by Repp, if there are no overt objections from discourse participants during conversation, a default process is assigned to the common ground. The default process by her definition is that the interlocutor

[16]Erotetic modality is a modality that connotes the speaker's wish to elicit information from the listener. Note that erotetic modality differs from interrogative mood. The latter is a sentence type that asks a question.

takes the new propositions to be true. Next, the propositions are added to the common ground.

Repp (2013) argues that MPs serve to manage the common ground and to indicate the status of the respective proposition with respect to common ground. The use of MPs shows whether or not the proposition which is not part of the immediately preceding sentence is already part of the shared knowledge between discourse participants. It also shows whether or not the proposition is expected by the speaker. These particles are thus an indicator of whether a proposition should be added to or be removed from the common ground.

In her further analysis, Repp (2013) points out that both German MPs *ja* and *doch* are used to cause interlocutors to retrieve information. More specifically, the speaker can use the particles to guide the listener to retrieve propositions that are already part of the common ground but currently not considered active for the listener. Kratzer and Mathewson (2010) suggest that the shared propositional contents, which operate at the level of expressive meaning, restrict the use of MPs to situations where the speaker is firmly committed to the descriptive content p (see Gutzmann, 2013; Kaplan, 1999; Kratzer, 2004; Potts, 2007). The content p represents an established fact that is obvious to anyone or that is shared by interlocutors (see also Grosz, 2014).

The nature of common ground pointed out by Repp (2013) is similar to that of Karagjosova (2004), which differs from the original idea of Stalnaker (1978; 2002; 2008) who takes the common ground to be a set of all propositions that both the speaker and listener agree as true. Repp suggests that all the common ground statuses of propositions should be included in the common ground, which is close to the concept of dialogue history in Karagjosova's common ground model. To be brief, the common ground in Repp's work does not exclude the propositions that are not agreed between the interlocutors as true. Instead, it should include all the propositions that the discourse participants are aware of. In this sense, it is not necessarily for the discourse participants to fully commit to the truth of the propositions. This model thus allows interlocutors to make statements with either a high or low commitment. There should be no objection to the intended

expressions of interlocutors involving the affirmation of possibility, necessity, or contingency.

Another feature to be noted in Repp's (2013) model is that propositions are not deposited in the straightforwardly when the speaker produces an utterance. This step will only happen when the listener accepts the propositions. For this, the listener can overtly express their agreement or at least refrain from showing any signs of disagreement. This idea is in accordance with an essential element in the work of Farkas and Bruce (2010). In their study, they call it **Table**, which indicates what is currently under discussion. We will discuss this in detail in **Section 3.4.2**.

3.4 Negotiating commitments

Having spelled out the notion of common ground and how MPs operate on the common ground, our next task is to draw up a suitable notion of discourse contexts with respect to how the speaker negotiates propositions with their interlocutors before the propositions are accepted into the common ground. A more sophisticated model of common ground is required, which will be beneficial to our analysis of the use of Mandarin UFPs in the subsequent chapters. As the studies of MPs as discussed in the previous section specifically focus on the common ground level, we need a more general discourse model that can offer us a bigger picture of the discourse process when particles are applied. This will help us clearly see how the speaker deploys particles to negotiate commitments in a broader context.

3.4.1 Discourse commitments

It is often assumed that, on the one hand, discourse commitments are propositions that are publicly made and have been publicly taken by discourse participants in a conversation as being true. These commitments are seen as a single set of shared knowledge to change the context (Sacks & Jefferson 1995; Stalnaker 1978; 2002; 2008). On the other hand, discourse commitments are associated with the mental

state of a discourse participant that they have publicly committed to (Döring 2016; Farkas & Bruce 2010; Farkas & Roelofsen 2017; Gunlogson 2001; Hamblin 1971; Krifka 2015; 2019). In this latter tradition, the Stalnakerian common ground is separated from the discourse commitment set of each participant. To be more specific, the set of discourse commitments of a participant at a point in time in a conversation includes the propositions that they have publicly committed to in the course of the conversation up to that point and which have not become mutual commitments yet. As for the common ground, it is the set of propositions that has been agreed upon by each and every participant in a conversation at a point in time as being true.

As pointed out by Farkas and Bruce (2010), having the common ground as a separate constituent allows us to capture the effect when one interlocutor denies what another says. In their observation, discourse commitments are not required to be correct, in the sense that the propositions expressed need to be true of the world where the conversation happens. They are, however, assumed to be correct by default given that a discourse participant is coherent if and only if their commitments are consistent, which is in line with the Gricean maxim of quality (1975), where one tries to be truthful and does not give information that is false or not supported by evidence. Therefore, if the common ground is inconsistent, it will lead to a conversational crisis.

Note that the set of discourse commitments may not be identical with the set of beliefs of an interlocutor (Döring, 2016). Discourse participants can always have different notions of what the current common ground is, and their set of beliefs can take in more than what they have already publicly committed to. Therefore, one should not commit to something that one does not believe given that a commitment can pose a significant risk to one's social standing. Once a person commits to something, it can be inferred that they indeed believe it. For the analysis of discourse, discourse commitments may be more explicit than the interlocutor's beliefs. In this sense, discourse commitments might be considered primary and beliefs secondary in the discourse.

3.4.2 Modelling discourse contexts

Following the work by Büring (2003), Ginzburg (1996) and Roberts (1996) on having a discourse constituent that records the **Question Under Discussion** (QUD), Farkas and Bruce (2010) rename it **Table**. The Table can be seen as a place where a stack of propositions is formed and what is currently under discussion is recorded. In their discourse model, they suggest that the immediate goal of a conversation is to empty the Table so as to settle the issue at hand. When the Table is empty, the discourse remains in a stable state. The interlocutors are thus expected to remove issues from the Table and to move them to the common ground to increase shared knowledge. Once there are items on the Table, there are issues that need to be tackled. Therefore, it is natural that a conversation is at an endpoint when the Table is stable.

Farkas and Bruce (2010) further suggest that a conversational move that places an item on the Table stack simultaneously projects a set of possible common grounds. These projected sets are regarded as supersets of the current common ground. When the Table is empty, the projected sets hold the current common ground as their only element for the time being. Otherwise, they are computed based on what is on the Table. If all the projected sets are not consistent, it will lead to a conversational crisis in the terminology introduced by Farkas and Bruce. In other words, such a crisis arises when the speaker and listener hold different opinions towards the proposition. Suppose one person favours a proposition, but the other opposes it. In order to reach an agreement (to remove issues from the Table and then to move them to the common ground), the interlocutors have to resolve the conflict, which will involve a lot of give and take. Requiring consistency for projected sets and the Table as mentioned earlier can be seen as a general principle of conversation. Even though what is in the projected sets provided can basically be computed from the Table, the projected sets are still regarded as an essential component in their discourse model:

> Finally, we note that the information we do represent is redundant for the examples we discuss. In particular, the contents of the *ps*

> [projected set] can always be calculated from the current common ground and the items on the Table. We nevertheless include it in our representation for the sake of clarity and for emphasising similarities between what we propose and previous approaches (Farkas & Bruce, 2010, p. 89).

The following example illustrates Farkas and Bruce's (2010) approach to modelling discourse context. Suppose A asserts a sentence 'Sam is home' with a propositional content p against the original input context $K1$.

A	**Table**	**B**
p	$\langle$'*Sam is home*'[D];$\{p\}\rangle$	
Common Ground $s_2 = s_1$	**Projected Set** $ps_2 = \{s_1 \cup \{p\}\}$	

Figure 3.1: $K2$: An assertion 'Sam is home' relative to $K1$

As suggested, the proposition p is added as a discourse commitment of A, and the syntactic representation of p is on the top of the Table stack. The feature D in the Table is to indicate that the sentence is declarative. After the confirmation is projected at the level of ps by adding p to each element of the input ps, the state of output context $K2$ is as shown in **Figure 3.1**. At this stage, the common ground of the output context $K2$ is the same as that of the input context $K1$. The next step will be to remove the item from the Table stack in order to reach a stable state. After doing so, the common ground will be then updated with the asserted proposition.

The effects of producing different kinds of sentences vary across discourse contexts. Take interrogative sentences for example. When a speaker utters a polar interrogative sentence, each element in the denotation of the question is added into the Table stack as shown in **Figure 3.2**.

When A asks a polar question, the issue is then raised on the conversational Table by adding both p and $\neg p$. The feature I in **Figure 3.2** indicates the sentence is interrogative. Next, the inquisitive contents are returned to a stable state by the listener offering a complete direct answer to the question. After a confirmation

A	Table	B
	⟨'*Sam is home*'[I]; $\{p, \neg p\}$⟩	
Common Ground s_1	**Projected Set** $ps_1 = \{s_1 \cup \{p\}, s_1 \cup \{\neg p\}\}$	

Figure 3.2: $K3$: A question 'Is Same home?' relative to $K1$

of the answer by the discourse participants in the conversation, the proposition either p or $\neg p$ will be added into the common ground to make an update. As can be seen, the main difference between declarative and interrogative sentences is that the denotation of the former is a singleton and that of the latter is twofold.

Based the work of Farkas and Bruce (2010) on discourse models, Farkas and Roelofsen (2017) later refine these notions slightly in order to be able to characterise some special effects in the discourse. They specify the basic components of a discourse context as follows:

(31) A basic discourse context is a triple <**participants**, **table**, **commitments**>, where:

a. **participants** is the set of discourse participants;

b. **table** is a stack of propositions, representing the proposals made so far;

c. **commitments** is a function that maps every participant $x \in$ participants to a set of possibilities, those possibilities that x is publicly committed to.

In their definition, the commitments set cs of a participant x, $cs(x)$, as the set of the worlds that are consistent with all the possibilities that x is publicly committed to: $cs(x) = \cap$ **participants**(x). The common ground in the model can be defined as the smallest set of possible worlds s. Therefore, all discourse participants are publicly committed to the actual world being contained in s: $cg = \cup \{cs(x) | x \in$ **participants**$\}$. With this updated model, we can examine the special effects in the discourse when the speaker signals their evidence for the

sentence and when the speaker determines the credence level that the speaker has in the relevant possibility.

It is worth noticing that, as pointed out by Farkas and Bruce (2010) as well as Farkas and Roelofsen (2017), there are implicated contents added on the Table stack along with the literal contents. These two contents are, however, separated from each other on the Table stack. The current work focused on literal contents indeed helps us to examine how the information is processed in a linguistic context. However, to develop a more complete picture of how interlocutors negotiate with one another by means of pragmatic inferences, we aim to extend the research of how the implicated contents fit into the discourse contexts when particles are applied.

3.4.3 Meta-information in discourse contexts

The scope of Farkas and Bruce's discourse model (2010) is confined to the Heimean **context change potentials** (Heim, 1983) rather than the actual intentions of the speaker that go beyond the truth conditions. In the dynamic tradition, meanings are often called context change potentials. They are no longer propositions or sets of possible worlds but ways of changing the common ground. To put it differently, a sentence has its semantic value which denotes a function from sets of possible worlds to sets of possible worlds to update any common ground (Rothschild, 2011).

Although German MPs are, on the one hand, relevant for context change potentials in that they impose conditions on the common ground, the fact that they bear no truth-conditional meanings, on the other hand, drives them to be relevant for the felicity of a discourse at the same time (Döring, 2016). Therefore, the discourse model that only focuses on literal contents of a sentence may not be enough for us to account for the meaning of MPs that is not purely truth-conditional. A model that concerns how a proposition relates to the common ground and how the development of mental discourse is represented will thus be ideal for us to account for the use of MPs.

Following the work of Farkas and Bruce (2010), Döring (2016) adopts

their work and then builds a more complex model to deal with some issues when German MPs are present in the discourse. Suppose a speaker mentions a piece of known information in their utterance along with the use of MP *ja* as follows:

(32) Peter hat **ja** seine Geburtstagsfeier abgesagt.
PN AUX PART 3SG.M.GEN birthday-party cancelled
'**As you know**, Peter has cancelled his birthday party.'

In her explanation, the use of *ja* in (32) is to indicate that the proposition of the sentence is already part of the common ground. That is, the information is not new. By using the particle, the speaker reminds the listener of the proposition which is retrieved from memory in the listener's mental representation of discourse (see also Karagjosova, 2004; Repp, 2013; Waltereit, 2001). The utterance in question might seem like a redundant discourse move given that the proposition does not lead to an increased common ground, in the sense that asserted propositions must be new or at least not obvious to both the speaker and listener, as is pointed out by Austin (1962) and Searle (1969). Döring (2016) suggests that the retrieved information on the common ground indicated by particle *ja* should be non-salient before the sentence with the particle is uttered. If the proposition indicated by the particle were salient, it would not be necessary to remind the listener of the proposition. The reminding particle is to make the proposition salient, which avoids a conversational crisis.

The proposition indexed by the particle can be treated as a new one on the Table as suggested by Döring (2016). This will leave room for discourse participants to have disagreement. For example, one can reject the particle-attached p by committing to $\neg p$ and placing it on the Table so as to reject the claim that Peter has cancelled his birthday party. As a consequence, the projected set is inconsistent. A conversational crisis then follows. Therefore, one of the interlocutors must retract their commitments towards the proposition. Döring proposes that the rejection is made for the assertion 'Peter has cancelled his birthday party' rather than the presupposition 'As you know, Peter has cancelled his birthday party'. If one rejects the presupposition of the sentence as in (32), they could alternatively offer a sentence such as 'What?' or 'How

am I supposed to know that Peter has cancelled his party?' This observation has been taken as evidence in her proposal that saliency should be part of the common ground. When the listener confirms the particle-attached proposition by explicitly committing to it or by remaining silent, they accept the update of the common ground.

Döring (2016) further points out that there are three ways to react to what an interlocutor says before the discourse commitments are added into the common ground. Note that discourse commitments are considered meta-information that provides descriptive information derived from MPs, which are different from propositions of the sentence. Furthermore, the common ground in her study is similar to the dialogue history in the study of Karagjosova (2004) and commitment space of Krifka (2019). How the listener can react is depicted as follows:

(33) **Acceptance**

i. $c + [\mathrm{A} \vdash \phi] = c \cup \{\mathrm{A} \vdash \phi\} = c'$

ii. $c' \cup \{\phi\} = c''$

(34) **Confirmation**

i. $[c + \mathrm{A} \vdash \phi] + \mathrm{B} \vdash \phi$

ii. $c \cup \{\mathrm{A} \vdash \phi\} \cup \{\phi\} = c'$

iii. $c' \cup \{\mathrm{B} \vdash \phi\} = c''$

(35) **Rejection**

i. $[c + \mathrm{A} \vdash \phi] + \mathrm{B} \vdash \neg\phi$

ii. $c \cup \{\mathrm{A} \vdash \phi\} = c'$

iii. $c' \cup \{\mathrm{B} \vdash \neg\phi\} = c''$

After an assertion is made, the listener can simply accept it by signalling explicitly or implicitly to show their agreement such as by nodding or backchanneling. The speaker's commitment is then added to the common ground as illustrated in (33). Similarly, the listener can also confirm the assertion by saying 'Yes, that is right' as illustrated in (34). In this case, the commitment is added to the common ground as well. As for the discourse move of rejection, the listener turns the

assertion down. The proposition will then not be added to the common ground as illustrated in (35). However, the commitments of the discourse participants are added to the common ground no matter what. Therefore, there are other meta-features required in the discourse model for a clearer representation of discourse process when particles are applied to utterances.

Common ground (CG), **salience** (SAL) and **Table** (TB) are three fundamental items in Döring's discourse model (2016) as follows:

(36) c: <CG(c), SAL(c), TB(c)>,
where SAL(c) $\subseteq$ CG(c)

The **Table** is where negotiations take place. Furthermore, as a salient part of the **common ground**, **salience** holds propositions and discourse commitments in it, which corresponds to the active common knowledge as suggested by Karagjosova (2004). There is also a non-salient part of the common ground. Using this apparatus, the use of MPs in German can be captured in the following way. Suppose a speaker produces an utterance containing the particle *ja* to remind the listener of something.

(37) Anna kommt **ja** aus Portugal.
PN comes PART from PN
'**As you know**, Anna comes from Portugal.'

where c + *Anna kommt ja aus Portugal* (= [ja ϕ]) = c';
defined if $\phi \vdash$ CG(c) & $\phi \notin$ SAL(c);
otherwise as with regular assertions

In example (37), before the utterance is made by A, the discourse model of Table, common ground, and salience is in the Status 1 as shown in **Figure 3.3**, where the Table is empty, and the proposition ϕ is in the common ground already. Once the utterance is made, both the proposition ϕ and the speaker's commitments are added to the Table which forms Status 2 as shown in **Figure 3.4**. They will then be added to the salience grid as long as the listener accepts or confirms the

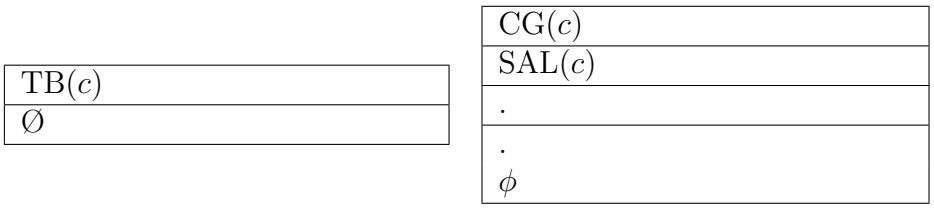

Figure 3.3: Status 1: Before the utterance is made

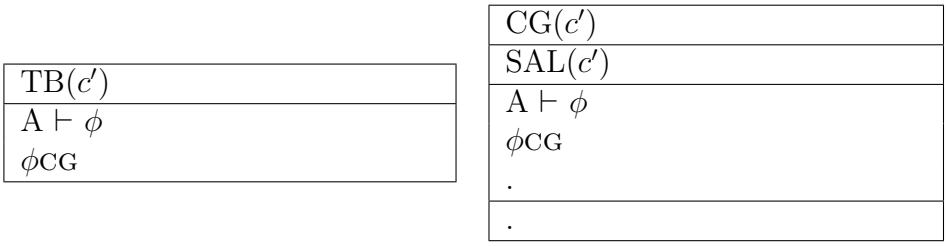

Figure 3.4: Status 2: After the utterance is made

proposition ϕ. Consequently, ϕ was part of the common ground but is salient now. However, in this case, the input common ground is identical to the output common ground.

3.5 The structure of discourse

Discourse is in general a connected series of utterances, which can be seen as a structured representation of concepts and thoughts in the human mind (see Kehler, 2011; Lewis, 2011; Tenbrink, 2020). A discourse perspective can help us to understand how UFPs are interpreted in the system of communication. In this section, we discuss what holds parts of the discourse together. In particular, we concentrate the first half of our discussion on discourse coherence and the second half on discourse relations.

3.5.1 Discourse coherence

When utterances are logically associated with one another and are gathered together as a whole, the construction of smaller discourse units can be considered

to be a coherent discourse. As pointed out by Reinhart (1980), discourse can be either **explicitly coherent** or **implicitly coherent**. When the discourse is directly marked by linguistic cues such as DPs, its coherence is considered to be explicit. This explicit coherence is also called cohesion in some studies in the literature (see Knott & Dale, 1994). In general, explicitly coherent devices or cohesive devices are used to connect a series of utterances in order to establish a coherent relationship intended by language users. By contrast, the discourse coherence is considered to be implicit when the listener is required to draw inferences in order to establish the relationships between the utterances to infer what the speaker intends to say. Consider the following examples, where the first is marked by cohesive devices while the second is not:

(38) John paints his house green **because** the post office is closed for two weeks. **Also**, spring is coming.

(39) John paints his house green. The post office is closed for two weeks. Spring is coming.

Döring (2016) argues that language users may expend less effort to parse the relations between discourse units signalled by discourse connectives in (38). These cohesive linguistic cues can facilitate building up explicit coherence of the discourse. By contrast, without these cohesive devices as shown in (39), it may take more efforts to derive implicit coherence. The listener may rely on real world knowledge or common ground to reconstruct the meaningful relation that is intended by the speaker between utterances in order to interpret the discourse as being as coherent as possible.

Döring (2016) notes that there are different possible interpretations for example (39) depending on the implicit question that it answers. In (40), Reading 1 illustrates an interpretation of (39) in response to a question like 'Is there any news?', while Reading 2 illustrates an interpretation of (39) in response to a question like 'What happened?'

(40) **Reading 1**

There is some news for you: John is painting his house, the post office

is closed for two weeks, and spring is coming.

Reading 2

John has time to paint his house **because** the post office he is working for is closed for two weeks. **As** spring is coming, he wants his house to look nice.

We can see from (40) that, even though the above three sentences seem to be irrelevant to one another, the discourse can in fact be coherent as long as comprehenders are able to reconstruct the less transparent relations between discourse units. To judge whether the discourse is coherent, semantics at the sentence level appears not to be the only material we can make use of. As pointed out by Kehler (2011), both explicit and implicit coherence play an essential role in discourse processing. That is, language users attempt to recognise or reconstruct a relevant relation between discourse units that are connected with one another when they comprehend the discourse.

The structure of discourse is in general considered to be hierarchical and recursive in much the same way as how words, in the generative tradition, are constructed into a sentence. Döring (2016) suggests that the two different readings in (40) can be represented in a hierarchical tree structure, where Reading 1 is illustrated in **Figure 3.5** and Reading 2 in **Figure 3.6**. The difference between them is suggested to be that Reading 1 reflects a **coordinating** discourse structure as spread out horizontally. On the other hand, Reading 2 reflects part of a **subordinating** structure as spread out vertically and part of a coordinating structure in the discourse. In general, relations between discourse units can typically be categorised as either coordinating or subordinating. Note that this binary categorisation was originally motivated by the **Right Frontier Constraint**, which was proposed by Polanyi (1988). It is suggested that new discourse units can only be attached to the **right edge** of the tree structure.

In the current literature, there is no consensus on the boundary of a discourse unit. It is debatable whether the elementary unit of a discourse is confined to a clause as a dependent or independent syntactic unit or whether it

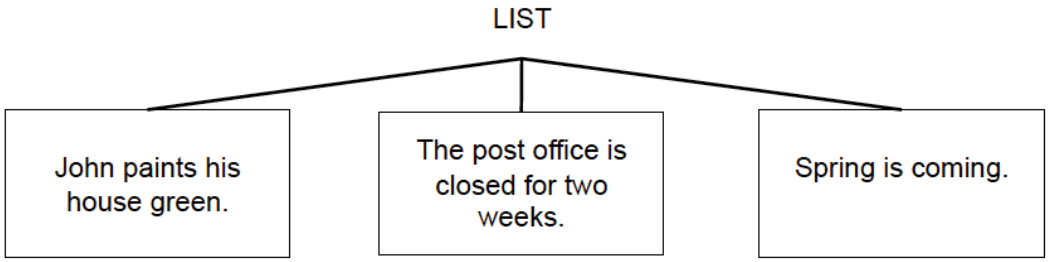

Figure 3.5: Hierarchical structure of the discourse Reading 1

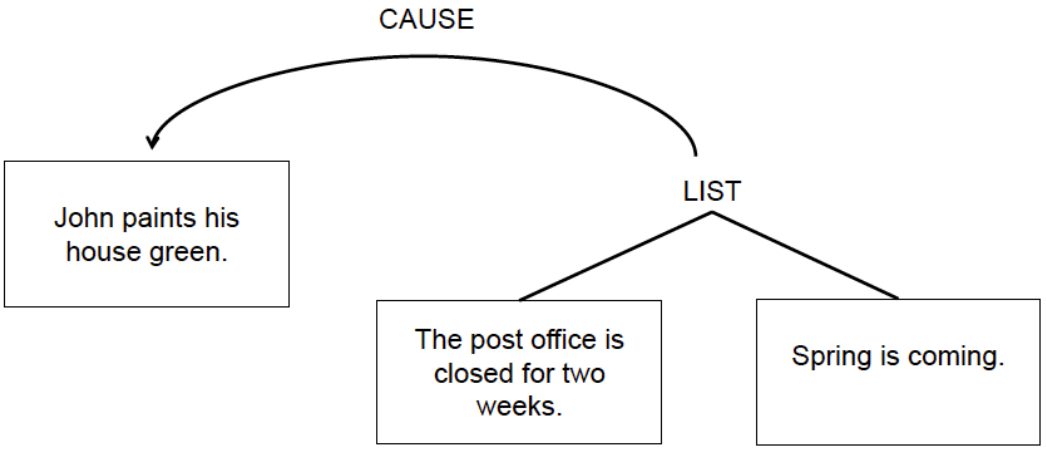

Figure 3.6: Hierarchical structure of the discourse Reading 2

should be defined as a proposition from a semantic point of view (see Stede & Irsig, 2012). On the other hand, as pointed out by Degand and Simon (2009), elementary discourse units can be seen as multi-dimensional units. On the basis of the spoken data from Corpus Valibel[17], they suggest that syntax and prosody should be taken as the criteria to segment discourse units. An elementary discourse unit is considered to be either syntax-bound or prosody-bound. In general, it is regarded as a complex issue in the literature to determine what the unit of a discourse is and how it should be identified.

3.5.2 Discourse relations

Based on our observation above, we can see that the relations between discourse units have an impact on determining whether or not the structured discourse

[17]Corpus Valibel was created by Valibel Research Center at the University of Louvain.

is coherent. Looking at these discourse relations is one of useful ways that may help us to understand how mental actions are represented in the system of human cognition (see Kehler, 2011; Tenbrink, 2020).

Discourse relations are also called rhetorical relations and coherence relations in the literature (see Asher & Lascarides, 2003; Jasinskaja & Karagjosova, 2020; Knott & Dale, 1994). These terms are interchangeable in a broad sense. In general, there are a wide variety of proposals which identify a long list of candidate relations. What is more, the listener may need to make some efforts to infer what the speaker intends to say (see Knott & Sanders, 1998; Knott & Dale, 1994). As a consequence, categorising the relations between discourse units on the basis of how they are represented in the human mind appears to be challenging. It is often claimed that there is no absolutely perfect fashion to determine how many discourse relations there are in language and how to properly describe them (see Cummins, 2019; Kehler, 2011).

Despite the fact that it may be difficult to establish a universal system of discourse relations, there is an attempt by Jasinskaja and Karagjosova (2020) to establish a **consensus list** of discourse relations. They compare various studies and then generate a list consisting of 6 main categories, which are **Elaboration**, **Explanation**, **Parallel**, **Contrast**, **Narration** and **Result**. The first two are suggested to be subordinating and the last four to be coordinating. A brief description of these discourse relations illustrated by Jasinskaja and Karagjosova is listed in (41) as follows:

(41) **Elaboration** holds between two discourse units where the second describes the same state of affairs as the first one. Usually, an additional requirement is imposed that the second description be more detailed and longer (cf. Hobbs, 1985; Kehler, 2002; Mann & Thompson, 1988).

Explanation gives the cause or reason why the state of affairs presented in the context sentence is the case. A typical Explanation connective is *because*, but the relation can also be conveyed implicitly without any connective (cf. Sweetser, 1990).

Parallel holds between two or more discourse units in virtue of the similarity or uniformity of their content along some relevant dimension. Typical markers of Parallel are *also* and *too* (cf. Hobbs, 1985; Kehler, 2002; Asher & Lascarides, 2003).

Contrast connects discourse units whose content is *opposite* or *contradictory* in some respect, and is typically marked by the connective *but* (cf. Asher & Lascarides, 2003).

Narration connects descriptions of events that are to take place one after the other, the order of events matching the textual order of utterances. This is typical for narrative texts and successive instructions. Often an additional requirement is imposed that the described events be temporally and spatially contiguous (cf. Hobbs, 1985; Kehler, 2002; Asher & Lascarides, 2003).

Result is sometimes regarded as causal strengthening of Narration. The second event does not only follow the first in time, but is also caused by it. On the other hand, Result is also often viewed as a dual of Explanation. While in Explanation the cause follows the effect, in Result the effect follows the cause (cf. Hobbs, 1985).

In the existing literature, discourse relations reflected by discourse particles such as *and*, *but*, *or*, *because*, *so* and *although* in many languages have been well documented. Nonetheless, they are not well-explored as regards UFPs in Mandarin. In subsequent chapters, we would like to look into how discourse units are associated with one another when these particles are present.

3.6 The source of knowledge

One way or the other, both UFPs in Mandarin and MPs in German can be used to shape the common ground during conversation (see Bross, 2012; Döring, 2016; Karagjosova, 2004; Lu, 2005; Lepadat, 2017; Wu, 2009). For example, the Mandarin particle *ne* serves to draw the listener's attention to a discrepancy. It delivers a message that the speaker desires to adjust the common ground given that the shared beliefs between the interlocutors might be contradictory for the time being. Likewise, the German particle *doch* can be used as a reminder for the listener. The speaker uses it to cause the listener to remember the seemingly forgotten information that is in the common ground. Suppose a person were invited to a party. Consider the following examples and take into consideration how the speaker in each case replies to the invitation with the Mandarin particle as shown in (42) and with the German particle as shown in (43):

(42) Bùxíng, wǒ hái yǒu lùnwén yào xiě **nǎ**.
NEG-work 1SG still have essay need write PART
'No, I have to write my essay **nǎ**.'

(43) Bei mir sind **doch** morgen Handwerker in der Wohnung.
at 1SG COP PART tomorrow builders in the apartment
'There are **doch** builders in my apartment tomorrow.'

Both the sentences are offered as a reason to decline the invitation to go to the party. In example (42), the person is too busy with their essay to go to the activity because their essay will be due by the weekend. In (43), the person cannot go because they will be required to stay at home to wait for some builders to fix their heater. The speakers in both cases attempt to point out to the listeners that the proposition should not be at all new to them. The reminding particles of both languages are considered to be an interactive device to engage the listener in a broader discourse context and to mark the missing knowledge the listener might have forgotten. Note that there can be more features that come along with the reminding function when the particles are present. However, we would like to concentrate in this section on the knowledge that is already known to either the

speaker or the listener and to leave other potential functions to the subsequent section.

The already known information to the listener clearly plays a crucial role in discourse interpretation. When the listener interprets an utterance, its source of knowledge will be reflected by the use of particles. Having established where the knowledge is from, the listener has more information to comprehend the speaker's intentions. However, there are situations, at least in Mandarin, in which it is not necessary for the listener to possess the presupposed information beforehand. That is, the knowledge may not be old to the listener. Consider example (44), in which a father urges his son to start having his meal.

(44) Bàba: Kuài qù chīfàn.
quick go eat-meal

Érzi: Wǒ bǎ fàn chī wánle **ā**.
1SG dispose meal eat finish-PFV PART

Father: Go to eat your meal, quickly.

Son: I have already finished my meal **ā**.

In (44), the son points out that he has done what his father asked by attaching the particle *ā* to the end of the sentence. A reading between the lines thus shows that what the boy says should have been known to both the father and the son. The use of the particle can function as a reminder to alert the father that he might have forgotten the proposition. However, it is also possible that this proposition is new information to the father. In this case, the boy can simply use the particle to show that the presupposed information might obviously be known to himself and others. On the basis of the two interpretations above, we can see that the question of who possesses the presupposed information is context-sensitive. Therefore, to whom the knowledge in the discourse is exactly known should be taken into consideration when we interpret the use of Mandarin UFPs.

In general, the source of knowledge can be basically categorised into subjectivity, intersubjectivity and objectivity. To some, the categories can be a binary pair, associating subjectivity with objectivity (see Lyons, 1995; Palmer,

2001; Verstraete, 2001) or subjectivity with intersubjectivity (see Coates, 2015; Langacker, 2008; Nuyts, 2012). Others may take all of them into their accounts as a ternary base (see Davidson, 2001; McDowell, 2003; Narrog, 2012; Traugott, 2003). This classification has been discussed at length in the literature of philosophy, psychology, anthropology, sociology, language sciences and other disciplines. Unfortunately, some authors use the notions of the three categories in an intuitive way, without formally defining them (see also Nuyts, 2015; Verstraete, 2001).

In linguistics, the discussion of the three topics in question mostly centres around the area of modality. However, it has been claimed that there is no need for the subjective, intersubjective and objective features to align with modality as a defining characteristic (Narrog, 2005). In this section, we would like to discuss the source of knowledge as an index of speaker attitude and to explore its role in the use of Mandarin UFPs and in discourse interpretation.

3.6.1 Subjectivity

Subjectivity may be the least debatable notion in comparison with the others in question. In general terms, the modal evaluation of a proposition is considered subjective if it is presented as being strictly the sole responsibility of an assessor (Nuyts, 2012). To put it differently, a subjective expression is an opinion that is derived from a speaker's viewpoint in discourse (Finegan, 1995), which can be called the **knowledge of one's own**, as pointed out by Davidson (2001). Therefore, when one utters a sentence like (45), taken from Lyons (1977), it can be seen as being subjective.

(45) Alfred **may** be unmarried.

In this example, one possible reading can be that the speaker makes a statement with a low degree of commitment with respect to the truth of Alfred's being unmarried, on the basis of their own assumptions. These assumptions towards the proposition are made from their general knowledge. In this case, the speaker attempts to express a sense of subjectivity as one which indicates that they are

responsible for the subjective expression rather than anyone else.

The proposal of Traugott (2003) is slightly different from that of others. In her work, Traugott defines the notion of subjectivity, which reflects the speaker's personal stance such as beliefs and attitudes, in modal development, a diachronic process of language change. She labels this process **subjectification**. Subjectification is treated in her study as a product of the gradual stages of grammaticalisation of modal devices over time. As time goes by, the degree of subjectivity will increase. Traugott further suggests a unidirectional tendency for modal meaning as follows:

(46) nonsubjective > subjective

As pointed out by Ziegeler (2015), it can be argued that subjectivity occurs with all modal utterances and that the observation of subjectivity is increasing as a by-product of the diachronic development of modality.

According to the characterisations mentioned above, it is clear that all the notions of subjectivity by different researchers more or less bear on each other. However, a question arises as to whether or not a proposition expressed in a Mandarin utterance containing a UFP gives rise to a subjective interpretation. Recall that we have spelt out as illustrated in example (44) that the speaker might use the Mandarin particle *ā* to indicate unknown information to the listener. On the basis of the example, it is obvious that not all the presupposed information is required to be old to the listener. Therefore, it would seem reasonable for us to expect that certain particles can be employed by the speaker to index the source of knowledge to their own subjective opinion. We do not exclude the possibility that the speaker may make use of different particles to manipulate various aspects of knowledge state in the discourse so as to make the conversation flow.

Suppose there were some students studying in the library. One of the students noticed a steady drizzle outside the building. He looked out the window with a frown on his face and spoke to his coursemates:

(47) Kuài xiàyǔle **bǎ**.
soon fall-rain-INCH PART
'It is starting to rain **bǎ**.'

Having noticed some changes outside the building, the student in (47) then shares the information with his friends. In this case, we cannot get the reading that the information is already known to the audience. Nor do we think that the information in question is known to both the speaker and someone else as we have mentioned in example (44). On the other hand, the speaker seems to convey a message on the basis of their own assumptions and to implicate that they are the only person to be held responsible for the truth of the proposition. Therefore, it may indeed be useful that we take the notion of subjectivity into consideration for the interpretation of UFPs. We will return to this point in the subsequent chapters and provide a detailed analysis for it.

3.6.2 Objectivity

Earlier, we alluded to the fact that Lyons (1977), who favours a binary base, demonstrates that there is a sharp distinction between objectivity and subjectivity, which can be traced back to Halliday (1970). In Lyons's observation, objectivity presents an objectively measurable chance that the circumstances under consideration should be true or false. By contrast, subjectivity expresses a purely subjective guess about its truth as we have mentioned in the previous section. Let us recall example (45) as illustrated in the previous section. Lyons argues that it is likely that we can get another interpretation from such a sentence. Say, if the speakers knows that Alfred belongs to a community and that there is a possibility of Alfred's being unmarried in the community, the expression is then objective, in the sense of mathematically computable chance. Consider another mathematical example taken from Huddleston & Pullum (2002):

(48) If x is a prime number between 90 and 100, it **must** be 97.

In (48), Huddleston and Pullum argue that the sentence is unlikely to be interpreted as expressing a subjective attitude of the speaker towards the truth of x being 97, but it is rather a mathematical necessity. As pointed out by Davidson (2001), this type of knowledge can be categorised as part of the **knowledge of external world**. To be brief, such knowledge refers to the idea that the truth

conditions of a proposition are not influenced by a sentient subject. That is, the existence of the proposition is independent of the human mind.

There are situations other than in the mathematical environment in which the speaker's expressions can be objective. For example, when the speaker is subject to social or legal norms, objectivity can be projected onto the utterance the speaker produces. Consider the following example in which a speaker is warning their friend not to do something dangerous as follows:

(49) You **should** never drink and drive.

Similar to the prior example of a prime number, the truth condition of the sentence in (49) is met without bias caused by a sentient subject. On the basis of the law, the speaker states what should not be done as a piece of advice, a suggestion or a moral principle. As can be seen, the law itself does not say in so many words that one should not drink and drive; rather, it says that to drink and drive is a criminal offence. Therefore, to infer that the proposition under discussion is not influenced by personal feelings or dependent on the speaker's mind, we need the lemma that one should obey the law.

A critical issue arises that the distinction between objectivity and subjectivity is not always clear. As pointed out by Verstraete (2001), the dichotomy between the two categories in question, in theory, should be defined with respect to the distinction between **speaker-related** and **content-related** functions. In practice, the distinction, however, remains poorly understood. Therefore, Verstraete suggests that a basic contrast between **performativity** and **non-performativity** can make a distinction between speaker-related and content-related functions as mentioned above, based on the work of Palmer (1983) and Nuyts (1993) on performativity.

In general, Verstraete argues that performativity associates with the utterance's illocutionary force. For example, when one makes a promise, the speaker puts themselves under an obligation towards the listener, which places them in a particular position of commitment to the status of the proposition. By uttering such performative expressions, the speaker is being subjective. On

the other hand, objective expressions are non-performative. They do not create any position of commitment. Functionally, non-performative expressions do not reflect the speaker's stance with regard to the propositional contents of the sentence, but belong themselves to the propositional contents. Consider example (50) in which Bill Clinton, when President of the USA, is commenting on a political controversy about healthcare funding:

(50) The key stumbling block remained Republican insistence on a Medicare premium increase. Mr Clinton argued that Medicare increases were not necessary to meet demands for a balanced budget. 'If America **must** close down access to quality education, a clean environment and affordable health care for our seniors in order to keep the government open, then that price is too high', Mr Clinton said in vetoing the temporary spending bill.

The modal verb *must* as illustrated in (50) does not simply express the existence of obligation. It encodes objectivity. The speaker takes up the position of Republicans who are committed to the Medicare premium increase, rather than committing the speaker himself to it. It is clear that the modal verb in the question echoes a point of view that was voiced in the preceding discourse, that is, it is attributed to the Republicans but not to Clinton himself. Therefore, the modal expression in the example signals objectivity by eliminating personal biases and emotions.

Conversely, Nuyts (2012) argues that objectivity may not be a suitable term to be applied in the description of modal categories given that a modal expression can refer to either the attitude of the speaker or that of someone else. He suggests that a number of proposals considering the objective dimension of modality are deficient in empirical evidence on how objectivity is linguistically coded. Instead, a framework of (inter)subjectivity was presented in his study corresponding to the division of objectivity and subjectivity. This will be discussed in more detail in the subsequent section.

At this point, we are in line with Nuyts' observation mentioned above. As

expected, it can be challenging for the listener to interpret whether the speaker is being objective or subjective. Recall that the prime number being 97 as in (48) is said to be objective in the mathematical sense. However, we wonder how the listener would know that the speaker's attitude is objective if they do not know the definition of a prime number. That is, when the listener is unfamiliar with certain topics, it might be difficult for them to evaluate the speaker's attitude. Similarly, if the speaker as in (49) is warning someone who moves from a place where drink-driving is not regarded as a serious offence, the listener might not know whether the warning is on the basis of the speaker's assumptions or of the law. Hence, we wonder whether or not language users would apply UFPs or other types of MPs to an utterance to encode an objective attitude by virtue of the fact that listeners might have difficulties in interpreting it.

3.6.3 Intersubjectivity

The notion of intersubjectivity has been used to refer to a variety of things such as common sense, agreement and shared divergences of meaning. As pointed out by Nuyts (2012), utterances of the speaker that encode various aspects of modalities must reflect general intentions and beliefs from at least one party. When the modal evaluation is presented as being shared between the evaluator and a wider group of people, it is considered intersubjective in a broad sense. From time to time, the listener can be included in the modal evaluation as well. On the other hand, it has been defined with a narrow sense as well. Davidson (2001) refers to intersubjectivity as the quality of being based on the knowledge of other people's minds.

In this study, we are inclined to adopt the broad sense as proposed by Nuyts (2015). Given that UFPs are used as an interactive device to index the speaker's attitude, it may be difficult to take the attitude away from the speaker. As opposed to the speaker's own responsibility to make commitments towards the utterance, intersubjective expressions serve an interactive purpose to indicate whether or not the modal judgement is in the common ground between the speaker and listener or the common ground between the speaker and someone

else. Suppose a judge of the Hight Court gave an informal verbal warning to the defendant for their behaviour towards the legal authorities in the courtroom.

(51) Your attitude is unacceptable.

After the defendant defies the authorities of the court, the High Court judge as illustrated in (51) issues a warning with an implication that the proposition should be known to someone else, possibly including the listener. That is to say, behaving in court properly can be seen as common sense that is shared by nearly everyone. The dimension of intersubjectivity is thus critical when the speaker desires to talk with the listener in order to reach a beneficial outcome over issues, where the speaker presupposes that their position is supported by others.

By contrast with the definition from Nuyts (2015), Traugott (2010) and Narrog (2015) associate intersubjectivity with the speaker's attention to the listener. A wide range of linguistic expressions such as MPs and DPs are treated in their study as intersubjectivity markers. Traugott argues the modal development with respect to the diachronic process of language change should be extended from **subjectification** as in (46) to **intersubjectification** as follows:

(52) nonsubjective > subjective > intersubjective

With the unidirectional tendency as illustrated in (52), linguistic expressions generally follow the diachronic path of evolution from being nonsubjective to subjective, and later to being intersubjective. Note that the reverse pattern is not expected.

Recall example (44) in which a father urges his son to start having his meal. In response to his father, the boy applies the particle *ā* to express either that the proposition (that he already did so) is known to his father or is known to someone else. If we assume that the use of language is driven by the principle of economy in general, the speaker may be expected to share no more information than is necessary. That is, when the speaker is being intersubjective, it seems unnecessary to offer superfluously detailed information, such as to point out to whom the presupposed information is known, given that the listener may have difficulties in interpreting it.

By virtue of the fact that intersubjectivity is context-sensitive, there is no need to mark whether or not the proposition is especially known to the listener or known to others as separate notions. Otherwise, such categorisation can lead the listener to an interpretive impasse frequently, where the dual possibilities of presupposed meaning may complicate the discourse interpretation. In the subsequent chapters, we will provide a comprehensive analysis of how the listener interprets intersubjective expressions involving the use of Mandarin UFPs.

3.7 Characteristics of modal devices

Given that UFPs are one type of MPs that occurs in the final field of an utterance, it is expected that they may share common features with other types of modal devices. Let us recall the definition of MPs in brief. MPs are claimed to be used to indicate how the speaker relates and indexes the propositional contents of the sentence to the common ground between themselves and other discourse participants and to encode modality for the utterance meaning. Having explained the source of knowledge and its potential effect on MPs, we feel obliged to investigate the second issue of how MPs signal modality. By doing so, we will have a full picture of the characteristics of UFPs and can later examine their effects in a broader discourse context.

The domain of modality remains notoriously challenging although a number of syntactic, semantic and pragmatic proposals within both formal and functional approaches have been put forward to examine the nature of modal devices, modal verbs and adverbs in particular (see Mifka-Profozic, 2017; Mithun, 2015; Palmer, 2001). By virtue of the fact that the existing literature particularly concentrates on modal verbs and adverbs, a more precise description of the nature of relation between MPs and modality is thus called for.

In this section, we do not attempt to provide a detailed discussion of the nature of the modal system. Instead, we will render a brief sketch of the modal system in Mandarin so as to present the bigger picture within which Mandarin UFPs are situated, and will discuss the relation between modality and these

particles.

3.7.1 Modality in Mandarin

The traditional notion of mood in most Indo-European languages is generally associated with a set of distinctive forms such as verbal inflections that are used to signal modality. Furthermore, modality can be seen as a facet of illocutionary force signalled by grammatical devices that expresses a speaker's degree of commitment and general intentions (Palmer, 2001). However, the terms of modality and mood in the research in Mandarin linguistics are usually interchangeable. There is no significant difference between them. The word *qíngtài*[18] that is frequently used in Mandarin linguistics refers to both categories in question (Hsieh, 2006). By virtue of the fact that the language lacks morphological inflections, a clear distinction of the two categories is often absent in Mandarin linguistics (Chappell & Peyraube, 2015). Generally, Mandarin words typically have only one grammatical form.

Note that the discussion of mood in Mandarin is mainly dedicated to sentence type. As pointed out by Nikolaeva (2015), sentence mood such as declarative mood, imperative mood and interrogative mood is a conventional device showing which direct illocutionary act type is being performed, and hence differs from the illocutionary force with which the sentence is uttered. The mood is a grammatical property of a sentence, whereas the force is a feature of an utterance that is made to perform certain actions.

Modality has also been one of the most challenging topics in the linguistic research on Chinese languages (see Alleton, 1981; Chu, 2009; Li, 2004; Ziegeler, 2015). In Mandarin, it can be expressed by modal verbs, adverbs and particles as in a great many other languages in the world. Syntactically, there are some distributional criteria enabling us to single out these subcategories from one another (Chappell & Peyraube, 2015). On the other hand, the traditional notion of modality in the semantic domain concerns necessity, possibility, certainty, obligation, permission and volition (Van der Auwera, 1996). In general, the

[18] *Qíngtài* literally means the states of mental and physical activities.

traditional schema centres on distinguishing the following three essential types of modality[19] (Mithun, 2015).

(53) **Epistemic** degree of certainty
Deontic permission and obligation
Dynamic capacity of first argument to realise the state of affairs[20]

Mandarin modal verbs are multifunctional, in the sense that they can express more than one type of modality, which is a crosslinguistic property shared by a number of languages. For example, the English modal verbs *must* and *may* can each express both epistemic modality and deontic modality. Compare the epistemic use as shown in (54a, 55a) and the deontic use as shown in (54b, 55b):

(54) a. It **must** be John who opened the door.
b. You **must** try some of the fish.

(55) a. John **may** be visiting his parents tomorrow.
b. You **may** leave now.

Likewise, compare the multifunctional use of the Mandarin modal verbs that *hùi* [may, can] can express epistemic modality and dynamic modality as illustrated in (56a, 57a), and *yīnggāi* [should] can express epistemic modality and deontic modality as illustrated in (56b, 57b):

(56) a. Zhāngsān míngtiān **huì** qù bàifǎng tāde fùmǔ
PN tomorrow may go visit 3SG-STR parents
'Zhangsan **may** be visiting his parents tomorrow.'

b. Zhāngsān **huì** kāichē.
PN can drive
'Zhangsan **can** drive'.

(57) a. **Yīnggāi** shì Zhāngsān bǎ mén dǎkāide.
should FOC PN dispose door open-STR
'It **should** be Zhangsan who opened the door.'

[19]The terms *epistemic*, *deontic* and *dynamic* originate from *episteme* [knowledge, ability to recognise], *deon* [appropriate, necessary] and *dynamikos* [powerful, strong] in Greek respectively.
[20]The first argument is generally referred to as a syntactic subject, and second argument a syntactic object. To put differently, dynamic modality concerns the ability of an agent to make something happen.

b. Nǐ míngtiān **yīnggāi** qù bàifǎng nǐde fùmǔ
2SG tomorrow should go visit 2SG-STR father-mother
'You **should** be visiting your parents tomorrow.'

In Mandarin, unlike modal verbs, it is rare that modal adverbs are used to express more than one type of modal expression. In general, most modal adverbs such as *dàgài* [probably] and *yīdìng* [certainly] are found in epistemic expressions and modify various lexical items such as verbs, adjectives and adpositions. They can also add additional meaning to clauses and sentences. The use of adverbs across language is typically predictable by virtue of the fact that most adverbs are restricted to a single interpretation. That is, the form and meaning of them are in a one-to-one mapping. Note that, semantically, similar interpretations of individual adverbs are often found in other languages, especially when the languages are close to one another (Boye, 2015), which makes the investigation of modal adverbs easier from a crosslinguistic perspective.

The literature has paid little attention to modal interpretation of UFPs. It is also difficult for us to examine the modality of UFPs from a crosslinguistic perspective because not all languages have modal particles. Most studies have treated the modality signalled by modal particles as a side-effect of illocutionary force, in the sense that they serve as discourse-general speech act indicators. Such treatment raises a critical issue that the modal characteristics might not be located within the particles themselves but in the discourse. For example, as mentioned in **Section 3.3.1**, Karagjosova (2004) points out that German particle *doch* can be used as meta-communicative check or meta-communicative correction by the speaker to convince the listener. Having taken discourse interpretation into consideration, we, however, consider that it is far-fetched to claim that convincing or persuasion should be a kind of modality the particle encodes. Rather, these functions seem to be a general speech act that is pragmatically reflected in the context. Therefore, we would like to examine whether or not the modalities signalled by UFPs are all context-sensitive. However, a question arises as to precisely what dimensions of modality we are looking for, which will be discussed in the following section.

3.7.2 Modal flavour and modal force

There are a number of approaches to investigating and categorising the meaning of modality. For example, Palmer (2001) suggests there is a clear contrast between modal devices that concern the speaker's judgement of the proposition and modal devices that concern the speaker's attitude towards a potential future event, which are called **propositional modalities** and **event modalities** respectively. The former includes epistemic and evidential modality[21], whereas the latter includes deontic and dynamic modality. On the other hand, non-epistemic modalities are grouped together as **root modalities** by Hofmann (1976), and the modalities such as deontic, teleological and bouletic whose properties concerns rules, goals, or desires are said to be **prioritizing modalities** as proposed by Portner (2009). As it would be impossible to do justice to the full range of different approaches of the nature of modality offered by an extensive body of research over many years, we will attempt to restrict ourselves to aspects that might be useful for our analysis of UFPs.

Conventionally, the meaning of modality comprises two major dimensions: modal flavour and modal force (see Kaufmann & Kaufmann, 2015; Kratzer, 2012; Matthewson, 2016). The dimension of modal flavour relates to the types of interpretation a modal device can express such as epistemic, deontic and dynamic. By contrast, the dimension of modal force relates to the degree of certainty the speaker commits to the modal expression such as necessity, probability and possibility.

Note that there is an additional dimension regarding modal-temporal interactions. The interval of reference time is provided in the lexical denotation of the modal device by tense. To put it differently, the tense provides the evaluation of time for the modal device (Condoravdi, 2002). However, modal-temporal interactions will not be discussed in this study because Mandarin does

[21]Evidentiality connotes the speaker's assessment of the evidence for their statement (Matthewson, 2015), which can be categorised into two broad types: indirective marking and evidential marking (Aikhenvald, 2004). The former indicates whether or not evidence exists for a given source of knowledge. By contrast, the latter indicates the kind of evidence such as whether the evidence is sensory, reportative or inferential.

not have grammatical morphemes to mark tense. Hence, we do not suggest that such temporal characteristics are relevant to Mandarin UFPs.

As pointed out by Matthewson (2016), crosslinguistic evidence allows us to draw a conclusion that modal devices in some languages are associated with various modal flavours while in others they may be lexically restricted. However, it is not evidently true that having a single modal device to express a range of modal flavours is a crosslinguistically pervasive pattern. Furthermore, different languages may not have the same modal device (Hacquard, 2011). In general, languages may differ from one another in how they categorise and express modal meanings.

The overwhelming pattern in Mandarin is for modal devices to restrict modal flavour lexically (Liu, 2015b). With this in mind, we are not necessarily bound to claim that a single Mandarin UFP can express various modal flavours in spite of the fact that modal verbs in Mandarin seem to be multifunctional. Our task is to find out what types of modal flavours UFPs can express, if any.

Up to this point, we have simply mentioned that modal force concerns the degree of certainty the speaker commits to the modal expression. Now, we would like to discuss the notion of modal force in more detail. Compared to modal flavours, the notion of modal force seems to be rather simple, in the sense that the characteristics of modal flavours might vary drastically from one language to another whereas this does not appear to be the case for modal force (Horvat, 2017).

As introduced by Kratzer (1991), the strength of modal expression can be reflected by an ordering semantics for the modality in which possible worlds are ordered by **ordering sources**. The ordering sources, such as possibility and necessity, function from possible worlds to sets of propositions that determine an ordering on the set of accessible worlds. In particular, all the propositions in the ordering source are equally weighted in developing the order on possible worlds. The ordering source offers us a way to examine the modal force of modal devices. In her research, Kratzer defines a list of ordering sources such as **good possibility** and **at least as good a possibility** as illustrated below:

(58) p is a **good possibility** in w
with respect to a modal base f and an ordering g iff:
$\exists u \in \cap f(w)\ [\forall v \in \cap f(w)\ [v \leq_{g(w)} u \rightarrow v \in p]]$

(59) p is **at least as good a possibility** as q in w
with respect to f and g iff:
$\neg\exists u \in \cap f(w)\ [u \in q\text{-}p\ \&\ \forall v \in \cap f(w)\ [v \in p\text{-}q \rightarrow u \leq_{g(w)} v]]$

As illustrated in (58), a proposition p is a good possibility if there is a world u, where all higher ranked worlds than u are p-worlds. As for example (59), a proposition p is at least as good a possibility as q if there is not a world in q-p that is ranked higher than all the worlds in p-q. However, Matthewson (2016) argues that this system might be too simple to deal with modal force given that the categorial source of ordering is not able to capture some relevant facts, namely the quantifiable degrees of modal force.

Recent work on the modal force has paid more attention to the concept of a **modal scale**, which is an ordered set of degrees of necessity and possibility. It mainly concerns how likely a proposition is to be true or how likely an event is to take place (see Lassiter, 2011; Matthewson, 2016; Portner, 2009). The probability of a proposition or event is a number between 0 and 1, where 0 roughly indicates impossibility of the proposition or event and 1 indicates certainty. The modal scale offers us a more precise fashion to examine the graded modality between different modal devices.

By virtue of the fact that both the quantification of modal force and the types of modal flavour play a significant role in the modal system and that we have little knowledge of such characteristics with respect to modal particles in Mandarin, the relation between the two modal dimensions in question and Mandarin UFPs will be discussed in more detail in the subsequent chapters.

3.7.3 Modal combination

Before we move on to the next chapter, we should also consider points about modal combination that may be relevant to our subsequent analysis of the use

of UFPs. In general, it is not uncommon to see in crosslinguistic examples that more than one modal device can be stacked in the same sentence. There are two ways in which modal devices can be combined. On the one hand, **modal concord** is a semantic phenomenon in which more than one modal device in the same sentence is semantically interpreted as if there were only one single modal expression (see Chang, 2012; Huitink, 2012; Grosz, 2010a; Liu, 2015b; Narrog, 2015). Modal concord is exemplified in English as shown in (60) and Dutch as shown in (61) respectively, both of them taken from Geurts and Huitink (2006):

(60) Power carts **must mandatorily** be used on cart paths where provided.

(61) Hij **moet zeker** in Parijs zijn.
3SG.M must certainly in PN COP
'He **must certainly** be in Paris.'

The two modal devices as illustrated in (60) are a modal verb *may* and a modal adverb *mandatorily*. Both items indicate a deontic flavour and express a necessary force. As in (61), the modal verb *moet* [must] and modal adverb *zeker* [certainly] can represent either an epistemic flavour or a deontic flavour, both with a necessary force. Geurts and Huitink (2006) argue that when modal devices are similar to one another in both flavour and force, there should be only one interpretation as a whole.

On the other hand, when each modal device represents different kinds of flavour and force, their interpretation should be **cumulative** or **compositional**[22]. The cumulative interpretation is one that multiple modals in the same sentence are semantically independent of each other with one taking scope over the other (Von Fintel & Borchert, 2006). Consider the English example taken from Zeijlstra (2008) as illustrated in (62) and the Mandarin example taken from Chang (2012) as illustrated in (63):

(62) **Maybe** Mary **has to** leave.

(63) Nǐ **yīdìng** hěn shěbudé **bǎ**
2SG certainly very reluctant PART

[22]The terms 'cumulative' and 'compositional' for modal interpretation are interchangeable in a broad sense in the study.

'You are **certainly** not able to bear to lose it **bǎ**.'

If we interpret the modal expression in (62) as exhibiting modal concord, we cannot explain the fact that the modal flavour and force of the two modal devices are different, where *maybe* represents an epistemic possibility and the phrase *has to* a deontic necessity. Rather, the sentence can be read as 'It might be the case that Mary has to leave'. Similarly, in the Mandarin example (63), the adverb *yīdìng* [certainly] represents an epistemic necessity and the particle *bǎ*[23] a deontic possibility. Note that we tentatively refer to the particle *bǎ* as an expression of deontic possibility on the basis that its quantificational force is claimed to be weak by a number of studies (see Deng, 2015; Liu, 2009; Ljungqvist, 2010).

Examining the frequent collocations of multiple modal devices and their relations can offer us more clues about the characteristics of these devices in a different way. Statistically, modal concord interpretations seem to be more numerous than modal cumulative interpretations when more than one modal device is stacked in the same sentence (see Chang, 2012). Given that the modality of UFPs has not yet been well studied, we would like to examine their collocations as an explanatory construction so as to tease apart the modal characteristics of UFPs. Further analysis follows in the subsequent chapters.

3.8 Chapter summary

We began this chapter by looking at how interlocutors communicate through the help of discourse contexts to make their conversation flow. Given that we have narrow bandwidth for communication, we have to exploit common ground. During conversation, language users can make use of lexical items as linguistic cues to unveil the information on the common ground. The technical notion of common ground can be seen as a dynamic set of propositions that will be updated from time to time for the needs of discourse participants.

[23]So far, we have no appropriate English translation for this Mandarin particle yet. At this early stage, we cannot go into the details as we have not yet discussed the characteristics of modality the particle *bǎ* presents.

Having examined a selected number of proposals of the relations between modal particles and common ground, we outlined how these particles are represented in a broad discourse context. From a crosslinguistic point of view, we discussed the use of middle particles in German by probing the belief system of individual interlocutors. As an indicator of common ground, these particles illustrate the status of respective propositions with respect to the discourse contexts.

We then went on to examine the characteristics of general discourse contexts to look for the bigger picture of the discourse process when particles are applied. Apart from common ground, there are discourse commitments that are associated with the mental state of an interlocutor indicating propositions that have been committed in the course of conversation up to that point and which have not become mutual knowledge yet. The structure and some meta-information such as salience and Table were also discussed for a clearer representation of discourse process. The more sophisticated discourse modal we have, the more useful information we can refer to for our analysis of Mandarin UFPs.

When discourse units are structured as a whole, it is important for language users to figure out what is intended for them to infer. Whether or not the discourse is coherent, how the listener reconstructs the relations between discourse units play an important role in it. To better understand how discourse relations are mentally represented in the human mind, we have to look into how UFPs are interpreted in the system of communication.

As we have noted that there can be more features in terms of the source of knowledge when UFPs are present, we concentrated on the knowledge that is already known to the speaker, listener and someone else. The three types of evidential knowledge, namely subjective, objective and intersubjective, were discussed and will be tested with the use of UFPs in subsequent chapters.

In the last section, we looked at the properties of modal devices in order to probe whether modal particles share common features with other members of the modal system such as modal verbs and modal adverbs. Before discussing what

dimensions of modality we should be looking for the interpretation of UFPs, we briefly outlined the modal system in Mandarin. Subsequently, the quantification of modal force and the types of modal flavour were discussed given that these two categories are core properties in the modal system and that they bear on Mandarin UPFs. Finally, we considered points about modal combination and treated them as an explanatory construction. A statistical comparison of frequent collocations of multiple modal devices offers another way to examine the characteristics of Mandarin UFPs.

Chapter 4

The analysis of utterance-final particles ā and ǎ

Particles in the final field, namely utterance-final particles (UFPs), typically constitute a genuine part of speech in their respective languages given their explicit syntactic distribution (Li, 2006; Erlewine, 2017; Yang, 2003), different from their counterparts in the middle field. In general, middle particles, such as those in German, are proposed to have a corresponding expression that belongs to a different part of speech (Gutzmann, 2015; Hartmann, 1998). For example, the word *ja* in German can mean either *yes* as an adverb or *as you know*, roughly speaking, as a particle. The overlapping distribution makes difficult to determine whether they are a polyseme with multiple meanings or a homonym that happens to have the same pronunciation, especially when both items can be used in a similar linguistic environment. Such phenomena may constitute an impediment to our description of their meaning and function.

The explicit syntactic distribution of UFPs, on the other hand, does not in fact make their analysis easier. Notoriously, as was discussed, they remain a fuzzy typological category because of their ambiguous nature, which gives rise to a difficulty in accounting for them. To be more specific, these particles are conventionally claimed to have little lexical meaning. They are mainly deployed to express the speaker's attitude within a particular discourse (see Han, 2019; Pan & Paul, 2016; Wu, 2009). Nevertheless, their semantics and pragmatics have

often been debated.

Although UFPs are suggested to be a member of MPs, little research has been specifically directed towards their modal properties. Instead, more attention has been directed to their contributions towards the interpretation of an ongoing communicative event. Take UFPs in Mandarin as an example. It is proposed that the particle *ā* can be of assistance to the speaker by providing the means to express a certain kind of attitude within their utterance. Its employment may soften the speaker's tone of voice so as not to sound offensive to others (Li & Thompson, 1981; Wu, 2004). Conversely, the particle *bā* can function as a catalyst for the listener to sense a certain tinge of irony, which may be seen as conveying a lack of respect (Chu, 2009; Zhang et al., 2018).

A question, however, arises as to whether the attitudinal features are derived from the particles as part of their semantics or derived from the broader discourse context as a result of pragmatics. Context seems to have an important role in our interpretation of UFPs because it may provide us a great amount of detail surrounding the communicative event we would like to concentrate on. In other words, we can make use of contextual information to examine how UFPs contribute to their host utterance and discourse during communication.

This chapter discusses the semantics and pragmatics of UFPs in terms of their modal and discourse properties. We will focus on Mandarin UFPs **ā** and **ǎ**, which are widely used in everyday conversations but the interpretation and use of which continues to be hotly debated in the literature. It is important to note that the particle *ā* has high level tone and the particle *ǎ* has mid tone with a slight fall, which represents tone number 1 and 3, respectively, in Mandarin spoken in Taiwan. In general, tones serve to tell apart words with different lexical or grammatical meaning, but this should not be confused with intonation that serves to express paralinguistic information such as indicating emotions of the speaker. Therefore, we may have to treat minimal pairs with contrasting tones in this study as different tonemes rather than as variants of a linguistic item with different spoken pitch.

To begin with, we scrutinise the modal properties of the particles in

question. If these properties are considered to be obligatory at sentence level, in the sense that they have an impact on the sentence's being used felicitously, they should then be treated as a fundamental attribute of the particles. Thus, we investigate whether modal properties can be cancelled when particles are used in different contexts. Next, context will be examined with great care. To get a complete picture of the use of UFPs, it is important to see how interlocutors interact in the discourse and what happens at a discourse level. Our discussion will be centred on how various sources of knowledge between the speaker and listener justify grounding in communication and on how certain features are derived from the interactive discourse. Note that we treat the common ground as a place to include all the propositions that the discourse participants are aware of, which is close to the notion of dialogue history and commitment space as pointed out by Karagjosova (2004) and Krifka (2019) respectively. In this sense, it is not necessarily for interlocutors to fully commit to the truth of the propositions, allowing them to make statements with either a high or low commitment. Besides, propositions are not directly put into the common ground but a place where negotiation is allowed, which is called *Table* by Farkas and Bruce (2010) and later Farkas and Roelofsen (2017). Lastly, we discuss the restrictions of use on different sentence types when the particles are present and their collocations with other linguistic items in the modal system. On the basis of this analysis, we will draw conclusions about the use and interpretation of UFPs.

4.1 Particle ā

The particle $\bar{a}$ has been extensively discussed in the literature, as noted in **Chapter 2**. Despite this, researchers have not successfully reached agreement on the modal and discourse properties of the particle and its effect on the utterance and on the discourse. Therefore, this section provides an extensive discussion on its interpretation and use in detail.

4.1.1 The fundamental modal property

From a maximalist perspective, Chao (1968), Liu and colleagues (1999) and Lu (1999) identified several distinct functions associated with the particle such as to confirm a question, to issue a warning and to indicate an impatient attitude of the speaker. Researchers from a minimalist perspective, by contrast, treat the particle as a radical monoseme, which generates a core meaning. In general, its analysis is expected to be economical, in the sense that a universal meaning can be identified as present in all uses of the particle. For example, Chu (2002) and Li and Thompson (1981) propose that the particle *ā* is applied to reduce the forcefulness of an utterance. In addition, Lu (2005) and Wu (2004) consider the essential function of the particle to be an indicator of the speaker's certitude, pointing out what the speaker truly believes may be contrary to the listener. In other words, its usage points to a conflict between interlocutors, in which they disagree about the truth of an assertion. Unfortunately, both accounts are either too general or too specific. As was discussed in **Chapter 2**, few of them successfully offer an ideal solution to counterexamples.

An alternative proposal is that the particle *ā* is used to construct **exclamatives** in Mandarin. In this type of exclamatory construction, the particle is frequently collocated with scalar adverbs such as *zhème* [so], *duōme* [how] and *hǎo* [very] (Badan & Cheng, 2015; Du, 2005; Yang, 2017). Consider the following example:

(64) Zhāngsān **zhème** gāo **ā**.
PN so tall PART
'Zhangsan is **so** tall **ā**.'

In example (64), the utterance is proposed to convey a sense that the speaker is fairly **surprised** at the tallness of Zhangsan. To be more specific, the adverb *zhème* [so] is responsible for the degree of exclamatory strength and the particle *ā* for the sense of surprise. Nevertheless, the sense of being surprised appears to remain in situ when the particle is removed from the sentence. Commonly, exclamatives appear together with a prosodic stress. A question hence arises as

to whether the surprised interpretation is entirely due to the emphatic intonation or the particle makes this contribution to the utterance.

Note that to determine the modal properties of the particle $\bar{a}$, we have to take sufficient context into account. Context, however, is in general an intractable variable, which can have an adverse impact on our interpretation of isolated sentences. When looking at the interpretation of the particle $\bar{a}$ in the discourse, we have to pay extra attention to whether its attributes are modal properties from the particle or discourse properties from the context.

Up to now, a number of definitions of the particle $\bar{a}$ seem to point towards the concept of **mirativity**[24], such as to express surprise (see Yang, 2017), to point out a conflict (see Wu, 2004) and to draw the listener's attention (see Lin, 2014b), as was discussed.

Mirativity has received little attention in the literature of Chinese linguistics, which possibly explains the disinclination of earlier authors to appeal to this notion. As a consequence, we would like to look into whether or not the particle bears a resemblance to it. It may be useful to analyse the meaning contribution of the particle $\bar{a}$ in these terms.

As pointed out by DeLancey (1997, and onwards), mirativity is a grammatical category that encodes the speaker's **surprise**, **unexpectedness**, or the **unpreparedness of their mind**, which has been recognised as a crosslinguistic phenomenon on the basis of the linguistic evidence from Tibetan, Turkish, Korean and other languages (see Abdiu, 2014; Liosis, 2010; Namgyal, 2001; Rett, 2011). These types of emotive information indexed by mirative particles are often said to be **new** to interlocutors (DeLancey, 2001; Aikhenvald, 2012). The exact connotations of mirativity, however, may vary from language to language. It is important to note that mirativity has from time to time been referred to as part of the category of **evidentiality**. Nevertheless, from a crosslinguistic point of view, mirative meanings are suggested not necessarily to be expressed through evidentials. Alternatively, they can be seen as a separate grammatical category in their own right by virtue of the fact that both evidentials

[24]Mirativity is occasionally labelled as **admirativity** (see DeLancey, 2001; Friedman, 1986).

and miratives can be realised contrastively through different grammatical items in a language (Aikhenvald, 2004; DeLancey, 2001).

In Mandarin, it is often said that there is no grammatical means to express mirativity in the language, and that this can only be done with mirative strategies. For example, the particle *le* is proposed to contribute a mirative overtone in a restricted context as a result of pragmatics (Zhang, 2013). Note that the particle is traditionally seen as an aspectual particle with two meanings. It reflects either a perfective aspect or a change of state. The concept of change of state can also be referred to as an inchoative aspect (Liu, 2015a). Nonetheless, Fang (2018) argues that the particle *le* serves as a mirative particle in its own right. According to her analysis, Mandarin is in fact a language with the grammatical category of mirativity. To be more specific, the particle is considered to mark the associated information as **newsworthy** or **surprising**, implicating that the information may be of particular interest to the listener or has surprised the speaker. Consider the following examples:

(65) Xiàyǔ**le**.
fall-rain-INCH
'It has started raining **le**.'

(66) Nǐ zìjǐ dōu wàng**le**.
2SG self even forget-PFV
'Even you yourself forgot it **le**.'

In example (65), there are a couple of colleagues about to leave the office. When the door opens, one of them finds out that it is raining. The person hence utters the sentence with the intention of calling the listener's attention to this newsworthy information, which may suggest the other colleague's bringing an umbrella with them. As for example (66), at an interview, a host reminds an actor of a past incident in which he was treated unfairly, but the actor cannot recall it. The host hence utters the sentence to express surprise that the actor would have forgotten such an unpleasant incident.

We, however, note that the interpretation of newsworthiness and surprise can be easily cancelled in other contexts. Suppose there are a few flatmates

working from home in their study. When one of them looks through the window and notices that it is raining, the message can then be shared with the others by uttering (65). Everyone now knows that 'It has started raining' and goes back to work. The message in fact does not need to be newsworthy or surprising. It can be a mere random fact one finds out, which attracts less attention. Fang's (2018) analysis runs the risk of relying too heavily on context as a contributory factor to the meanings that it takes to be intrinsic to linguistic items in isolated sentences. Although counterexamples suggest that the particle *le* is not a mirative, we need not abandon the idea that Mandarin has mirative particles and that the particle *ā* is such a particle. A further investigation is, however, required.

Before proceeding with our analysis of the particle *ā*, we should briefly consider points of difference between mirativity and exclamation. The debate as to whether or not miratives differ from exclamatives is like a war with no end. As pointed out by Olbertz (2009), on the basis of Spanish data, mirativity is semantically encoded in the language, which is different from interrogative exclamatives in English. Nevertheless, Unger (2019) argues that mirativity and exclamation are the same, and that mirative force is in fact exclamative force. The former term is mainly used in language typology and the latter in European-oriented linguistics. In Chinese linguistics, most studies favour the term 'exclamatives' rather than 'miratives' (see Badan & Cheng, 2015; Du, 2005; Fang, 2018; Yang, 2017; Zhang, 2013).

Note that it is not uncommon for a language such as Khoekhoe to use a declarative particle for the purpose of making a statement (see Witzlack-Makarevich & Nakagawa, 2019). Nor is it uncommon to use an interrogative particle to request information, such as in Japanese (see Narrog, 2018). Although it may be typologically rare, there is a complex system of forming a command in Zargulla, in which they employ a wide variety of imperative particles (see Amha, 2013). Crosslinguistically, the declarative, interrogative and imperative force can be reflected by using particles. As a consequence, the question remains open of whether it is useful to have a different category such as mirative particles in order to express one's emotion or whether these particles could simply be referred to

as exclamative particles given that both their contributions seem to be the same. We, however, will leave this hot potato here because what we aim to focus on in this study is on properties of UFPs rather than the terminology. Tentatively, we adopt the point of view of Unger (2019) and others who regard a mirative as an exclamative, for the sake of our analysis.

Back to our discussion of the particle *ā* , we at this point aim to determine whether or not the interpretation of surprise taken out of exclamation (or mirativity if preferred) is the best fit for the particle. Bearing in mind that it is important to scrutinise its use in context in order to avoid unnecessary **interpretive bias** that may be easily derived from isolated sentences. Suppose there were a couple of friends chatting about what they did and where they went the day before their conversation. During the conversation, Zhangsan shared with Lisi that their mutual friend Wangwu was seen in PX Mart located in Taipei. Consider the following example and look at how Lisi responds to what Zhangsan says:

(67) Zhāngsān: Wǒ zuótiān wǎnshàng qù Quánlián mǎi dōngxī deshíhòu,
1SG yesterday night go PN buy stuff STR-time

kàndào Wángwǔ zài nàlǐ .
see-reach PN exist there

Lǐsì: Tā bù zài Táiběi **ā**.
3SG NEG exist PN PART

Zhangsan: When I was buying stuff in PX Mart last night, I saw Wangwu was there.

Lisi: He is not in Taipei **ā**.

After being told that Wangwu was in a supermarket located in a city in which he is less likely to be present, Lisi applied the particle *ā* to express a sense of **surprise** as a means to voice an opposite opinion that such information was contradictory to what they had known of. Specifically, Lisi's being surprised is because Wangwu had already told both Lisi and Zhangsan, shortly before this conversation, that he would be having a business trip in London. When the particle is removed

from the sentence in example (67), the sense of surprise appears to be cancelled simultaneously. The application of the particle indicates that the assertion of Wangwu's whereabouts is somewhat confusing or even shocking. Specifically, what Zhangsan says appears to violate the common ground between him and Lisi. A detailed discussion of the effect of the particle in discourse will follow in the next section.

It is important to bear in mind that we should not confuse the semantic attributes of the particle with its pragmatic manifestation. For example, Lisi in (67) might instead convey the same kind of surprise by using intonation for the purpose of signalling an emotion towards the utterance. With the aid of intonation, the listener should be able to catch the targeted sense. However, such a prosodic feature is a means of pragmatics rather than the semantics of the particle we aim to concentrate on in this section. The sense of surprise is considered in the literature to be part of the particle's semantics.

Let us consider the above example in another context. Suppose Lisi deploys the particle to respond to what Zhangsan says might be contradictory to what they have heard from Wangwu the other night. Although Zhangsan's assertion contradicts the shared knowledge they have in the common ground, it is not necessary for Lisi to feel surprised at it. Disagreement does not necessarily entail surprise. In general, disagreement is lacking approval of what others say. Surprise, by contrast, is a mental state as the result of an unexpected event that occur in varying levels of intensity. The former need not lead to the latter. Specifically, Zhangsan's assertion of Wangwu's whereabouts was unexpected to Lisi, but Lisi could be relieved or so because staying in London might be dangerous by then. Therefore, the surprised interpretation is less likely to be accepted in this case.

With the data checked again, we confirm that the sense of **unexpectedness** is reflected by using the particle. On the other hand, the sense of surprise will only be acceptable with the help of intonation or in a restricted context. In other words, we suggest that the particle $\bar{a}$ is responsible for an unexpected interpretation, and the degree of emphatic strength is in fact

reflected by the speaker's intonation or the use of scalar adverbs. Of course, there can be more pragmatic strategies one can utilise. In general, how strong the unexpectedness the listener recovers largely depends on what kinds of emphatic strategy the speaker applies.

The empirical data appear to be compatible with the view that the sense of unexpectedness serves as an essential component derived from the particle in question. However, a question arises as to how we determine that the use of the particle is to express unexpectedness rather than to identify the speaker's disagreement as proposed by Wu (2004), among others. Both characteristics seem to fit well enough into the situation that either one can be considered to be a possible property for the particle. However, the expression of unexpectedness and disagreement functions like an indicator of how the speaker relates their attitude to certain information at the discourse level. We will come back to discuss the discourse effect of the particle in the next section because we intend to focus on modal properties at this point.

Recall that the interpretations of surprise, unexpectedness and the unpreparedness of the mind can be reflected by an exclamative. We hence have to check carefully whether or not senses other than unexpectedness can be expressed by using the particle *ā*. From a polysemic minimalist point of view, it is possible that a particles has more than one meaning. Suppose that Lisi is a film producer who feels that their film has been unfairly overlooked for an award, due to discrimination. Consider the following example in which a conversation takes place after the person makes the complaint about the competition:

(68) Zhāngsān: Hái zài yīnwèi méi dé jiǎng bù kāixīn mā ?
still PROG because NEG get award NEG happy INT

Lǐsì: Zěnme kàn dōu shì wǒmen pāide bǐ tāmen
how see all FOC 1PL shoot-STR than 3PL

pāide hǎo hěnduō **ā**.
shoot-STR good many PART

Zhangsan: Are you still unhappy not to have won the award?

Lisi: No matter how we look at it [from different aspects], the film we shot is way better than theirs **ā**.

In example (68), one can be fully prepared for the moment at which the award will be announced. Despite not winning the award, what the speaker disagrees with can be unexpected to them but does not need to come as a sudden fact. Clearly, the **unpreparedness of mind** varies in context, which is also true of other examples we have discussed. The use of the particle does not entail the sense of unprepared mind.

Alternatively, what the particle *ā* reflects is the sense of unexpectedness rather than other senses. In response to Zhangsan's concern, the use of the particle points out Lisi's disagreement. That is, Lisi believes the award for Best Picture should have gone to their team because the quality of their film is obviously better than that of others. Note that what Lisi utters serves as an obvious explanation to why Lisi disagrees with the decision, which is indirectly licensed by the particle in the broad discourse. To be more specific, the response links to a rhetorical relation for the process of discourse, by which two discourse segments can be logically connected to one another. We will come back to this in the next section to discuss the relationship between rhetorical relations and UFPs.

On the basis of the observed data above, we hence propose that the unexpected interpretation is encoded in the particle *ā* . In addition, other senses such as surprise and unpreparedness are excluded from the essential property of the particle because their contributions in general vary from context to context, and hence appear to be pragmatic in origin. On the other hand, we can suggest that it is likely the particle can be associated with an exclamative force, but not necessary to be an exclamative in its own right. The determination cannot be made until further research in exclamative particles is undertaken. Given the limited space of the study, we will focus on the properties of UFPs and leave this issue open.

4.1.2 The source of knowledge

Having clarified the fundamental property of the particle $\bar{a}$, we now turn to look at the effect of the particle at a discourse level. Our aim is to examine how the speaker communicates with the listener to achieve particular goals through the management of common ground when the particle is present as compared to when it is not. A discussion of the interaction between UFPs and the context in discourse will hence be presented. To be more specific, we will look into how propositional contents and modal meanings are combined within a wider range of contexts.

Traditionally, linguistic and physical contexts and world knowledge are considered to be static, and are given as a set of variables for the listener to interpret the meaning of a sentence that concerns the truth value of a proposition. On the other hand, dynamic contexts are built as an environmental resource for the production and comprehension of a sentence (see Cap, 2011; Fetzer, 2017; Heim, 1992; Van der Sandt, 1992). At this point, we will particularly focus on the static context.

Recall that a few proposals seem to consider Mandarin UFPs to be relevant to the management of common ground. For example, their application is presumably made to signal the source of knowledge, referring to the source from which the speaker receives the information rather than how the information is received by the speaker. The exchanging of information can be either speaker-oriented or listener-oriented (see Lepadat, 2017). In other words, the targeted information is either known to the speaker (in the speaker ground) or to the listener (in the listener ground). As pointed out by Chu (2002), the particle $\bar{a}$ is applied to indicate that what is said is directed to the listener, and the particle $\check{a}$ lies at the opposite end of the scale, which picks out the speaker. However, the idea has been briefly touched upon by these researchers without expanding it in detail. What we know so far is that these devices are heavily applied in a setting that requires a communicative interaction between the speaker and listener. For example, this could be one in which the information marked by the particle is associated with the listener, or the listener is responsible for the information. In

order to fully understand the use of UFPs, it is important to look into how these particles relate to the source of knowledge and the context in discourse, which should be seen as important contributors to the particles' interpretation during the communicative process.

There are a number of means such as modal verbs, modal adverbs and modal particles that one can use to refer to the source of knowledge in order to make communication more effective. Even paralanguage such as prosody and facial expressions can do the same thing. Their use interrelates with the speaker's attitude to the source of knowledge (Aikhenvald & Dixon, 2014). It is important to bear in mind that the means of indexing the information can be different from one language to another. There is never only one way of expressing from what source the speaker obtains the information and how they obtain it. In general, the ways of tracing back the source of knowledge one has can be grammaticalised in one language but pragmatically encoded in another.

At this point, we will particularly focus on how the source of knowledge relates to the use of the particle *ā* in the broad discourse. Given that the information source can be easily confused with the notion of evidence, it is important for us to distinguish the source of knowledge from evidentiality. In the traditional sense, evidentials are a grammatical device that is used to report whether a statement is visually witnessed, heard from others or inferred based on personal assumptions (Lowe, 1999), which differs from our focus on the speaker's indexing what information is known to whom. On top of this, personal justifications for a statement will also be excluded in our analysis because they mainly relate to how the speaker evaluates propositional contents.

Recall an example in which a father impatiently urges his son to start having his meal. The example is repeated as follows:

(69) Bàba: Kuài qù chīfàn.
quick go eat-meal

Érzi: Wǒ bǎ fān chī wǎnle **ā** .
1SG dispose meal eat finish-PFV PART

Father: Go to eat your meal, quickly.

Son: I have already finished my meal **ā** .

As was discussed, the application of the particle in (69) renders a reading between the lines, which represents that what the boy has said should have been known to both the father and himself. To be more specific, the particle is presented as a reminder so as to alert the listener that what was asserted should already have been known to him. The father must have forgotten the fact. In this case, the additional information licensed by the particle is directed to the father, which resides in the common ground to which the father should have access. As pointed out by Lepadat (2017), such knowledge can be considered to be **listener-oriented**, in the sense that the proposition is somewhat associated with the listener.

There are other scenarios indicating that the information indexed by the particle in question can be derived from the real world that is common to most people in the world. This type of information is called **real world knowledge** (or **encyclopaedic knowledge**). Let us look at example (69) again, but with a different background setting. Suppose a family lived in a world where people strictly obeyed their law. Their son was no exception who always behaved well on the basis of the expectation of his parents and of the society. On top of this, there was a regulation to limit children under 12 years of age to finish their meals at a certain time in order to keep them healthy. While the father saw the son playing video games at lunchtime, he warned him to go to eat his meal. However, the boy replied that he had already eaten and indicated through the application of the particle that it should be common sense that no children would play games before finishing their meals. That is, why the boy was playing games at such time should be easily understood due to the real world knowledge in their possible world that children can only do other things after their meals are finished off. Therefore, this message is not only shared with the speaker and listener in their common ground but also with others. Note that whether or not the information is known to the listener in reality does not exactly matter. Its use is in general to point out that what the speaker intends to say should be shared by nearly everyone in

this world.

By virtue of the fact that this type of information is in a ground which is accessible to the speaker, listener and other people, the term listener-oriented is no longer appropriate. The concept of listener-orientation confines the information to participants in the conversation, so we have to revise the description of the information source licensed by the particle *ā* . When the source of knowledge can be associated with the speaker, the listener and the real world, we name it **intersubjectivity**, meaning the targeted information can be known to both parties of the conversation and to other individuals in the world, as common knowledge (see Hancil, 2018; Nuyts, 2015; Van der Wal, 2015). This categorisation can be useful to our interpretation of the source of knowledge when a third party other than the listener is involved.

We can also apply this point of view to our previous examples. For example, in (68), the person complained that their film should have won the award for Best Picture and suggested that it is fairly obvious that anyone privy to common knowledge would agree with the truth of this claim. As a consequence, when the particle *ā* is employed, the source of knowledge is either in the common ground between speaker and listener, or in the ground shared by the speaker and others (probably including the listener). Hence, the term intersubjective would be more appropriate and inclusive.

It is worth noticing that the modal property of unexpectedness and the indication of intersubjectivity are at play simultaneously. That is, the particle *ā* is attached at the end of the utterance to license the notion of intersubjective unexpectedness. We discuss them in separate sections to remain clear in our analysis and to stay focused on each theme.

4.1.3 Restrictions on sentence types

Crosslinguistically, the syntactic distribution of MPs has been widely discussed (Alm et al. 2018; Erlewine 2017; Gutzmann 2015; Karagjosova 2004; Li 2006; Myers 2015; Paul & Pan 2016; Yang 2014; Yang 2003). For example, the German particle *ja* only occurs in declaratives, and *den* in interrogatives. While *wohl*

is restricted to declaratives and interrogatives, *doch* is unacceptable only in exclamatives. However, there is some evidence against the validity of syntactic constraints on the use of MPs. The occurrence of these particles appears not to purely rely on their inter-sentential distribution. Compare the following two examples, which differ only in their main clause where one of them contains a negation and the other does not (extracted from Kwon, 2005):

(70) Zum zweiten glaube ich, daß wir **ja** noch einige Hürden bezüglich
to-the second believe 1SG that 1PL PART still some hurdles regarding
Herrn H zu nehmen haben.
mister PN to take have
'Secondly, I believe that we **ja** still have to overcome some hurdles regarding Mr H.'

(71) # Zum zweiten glaube ich **nicht**, daß wir **ja** noch einige Hürden
to-the second believe 1SG NEG that 1PL PART still some hurdles
bezüglich Herrn H zu nehmen haben.
regarding mister PN to take have
'Secondly, I **don't** believe that we **ja** still have to overcome some hurdles regarding Mr H.'

Despite the fact that the embedded clauses of both examples are identical, only example (70) is considered acceptable. Nevertheless, it is unlikely that the negation in the main clause, as in (71), has an impact on the syntactic status of the embedded clause and prohibits the use of the particle *ja* (Gutzmann, 2015). By virtue of the fact that grammatical operations are local in natural languages, the effect of negation is subject to a **locality condition** (see Radford, 2004). That is, the scope of negation is local to the clause in which it is found, which does not extend to the second clause. This is also true of a compound or a complex sentence. The constraints of syntactic contribution are said to be linked with the meaning of the particle.

A question arises as to whether the use of MPs is semantically or pragmatically restricted at the sentence level. In the literature, the evidence appears to favour that it is semantic effects that are relevant to the use of these particles by virtue of the fact that their use is clearly not prohibited by pragmatic factors (Gunlogson, 2001). Consider the following example:

(72) Du kommst **ja** morgen um zehn?
2SG come PART tomorrow at ten
'You are **ja** coming tomorrow at ten?'

As pointed out by Gutzmann (2015), with the help of intonation, the declarative sentence in (72) is pragmatically used as a confirmation question. In this case, a rising pitch takes place at the end of the sentence where a falling pitch should be applied in the first instance. Recall that the particle *ja* can only be used in declaratives. If the pragmatic incompatibility between the particle and asking a question might lead to the ban of the particle *ja*, one would expect the utterance to be unacceptable. However, this is not the case as we see the utterance is felicitously used in conjunction with uptalk. The notion of semantics thus appears to be the level on which the restrictions should be imposed.

Let us get back to Mandarin particle *ā*. At this point, we aim to examine the constraints on the use of the particle. Meanwhile, we will see whether or not the restrictive phenomenon of German MPs and of Mandarin UFPs are similar, notwithstanding that the former language has their MPs in the middle field of an utterance and the latter in the final field.

It is claimed that there are syntactic constraints on the presence of the particle *ā*, which can only be used in non-interrogatives (see Lee, 2004; Lin, 2014b; Wu, 2004). In other words, it can occur neither in declaratives nor in imperatives. The sentential restriction is, therefore, used to distinguish the use of the particle *ā* from the particle *ǎ*. This minimal pair of particles with different tones is said to present complimentarily as variants conditioned by sentence type. Note that there is a general tendency to believe that the particle *ǎ* with the contour tone is derived from the particle *ā* with the level tone because the former is absent in a number of Mandarin dialects such as the Beijing dialect and Harbin dialect, which are principally distributed in the northern part of China (see Fang, 1994; Liu, 2015c).

Previous studies, however, neglect the fact that the particle *ā* can in fact be present in interrogatives in everyday conversation. Such presence should not be seen as an exception since its use can be found extensively in the data.

For example, the particle was found when a Taiwanese presidential candidate, Ms Hsiuchu Hung, on behalf of Kuomintang (Chinese Nationalist Party) was interviewed in the press. The following example is the conversation which took place between her and a journalist:

(73) Jìzhě : Dǎng zhōngyāng chuánchū, ruò míndiào bù jiā jiù
party centre say if poll NEG good then

bī tuì.
force back

Hóng Xiùzhù: Shì shéi shuōde **ā**? Shì shéi yǒu zhège shēngyīn
FOC who say-STR PART FOC who POSS this voice

ā? Rúguǒ yǒu rén jiǎng zhège huà jiù qǐng
PART if EXT human say this speech then please

tā zhàn chūlái shuō: 'Wǒ jiǎngde'.
3SG stand out say 1SG say-STR

Journalist: The party says you will be replaced if the poll rating is negative.

Hsiuchu Hung: Who said it **ā**? Who has this kind of opinion **ā**? If someone has said such a thing, I ask them to stand out and say: 'I said it'.

In (73), Ms Hung combines the particle with an open interrogative in response to the journalist's remarks. It is clear that the previous suggestion of the syntactic selection for the particles *ā* and *ǎ* is not valid given that the particle *ā* is felicitously used in an interrogative. Therefore, we know that syntax does not constrain the distribution of the particle *ā* by virtue of the fact that it can be used in all types of sentence under appropriate circumstances. What is more, these two particles should not be treated as allotones or variants of the same variable because they can be present in the same environment of syntactic construction. They, however, should be seen as two different morphemes, which boast distinct meanings.

4.2 The effects of ā in discourse

As was discussed in **Chapter 2**, the definitions of discourse particles (DPs) and modal particles (MPs) are notoriously difficult to distinguish because both types of function word have weak lexical meaning. Traditionally, both terms are often interchangeable in the literature. However, having clarified their properties, we know that MPs can contribute to the proposition and common ground between interlocutors and that DPs are used to link intermediate segments in a local discourse. A question arises as to whether MPs boast discourse properties in any sense, as they are often claimed to be a subcategory of DPs (see Degand et al., 2013; Fischer, 2006).

In this section, a discussion of the effects of the particle $\bar{a}$ in discourse will be rendered. We aim to focus on whether or not the effect of reducing the forcefulness of an utterance and the effect of disagreeing with others are derived from the particle itself, which has been extensively discussed in previous studies. If it is the case that discourse properties are a fundamental attribute of the particle, these discourse properties would have an impact on the interpretation of the particle. If not, these discourse effects should be seen as personal evaluations towards the utterance which would vary in different contexts as a result of pragmatics.

4.2.1 Softening effects

By comparing the presence and absence of the particle $\bar{a}$ in the identical sentence, the application of the particle is claimed to reduce the forcefulness of the proposition, namely to contribute a **softening effect** (see Chu, 1994; Li & Thompson, 1981; Wu, 2004). To put it another way, the utterance with the particle can soften the mood of the speaker and thus create a friendly environment for the conversation. This softening effect is considered to be a core property of the particle, meaning the reducing effect of forcefulness to the utterance will not be accessible when the particle is absent. Consider the following example:

(74) Míngtiān zǎodiǎn lái.
tomorrow earlier come
'Come earlier tomorrow.'

(75) Míngtiān zǎodiǎn lái **ā**.
tomorrow earlier come PART
'Come earlier tomorrow **ā**.'

As pointed out by Chu (1994), the degree of forcefulness in (74) is stronger than in (75). With the particle present, the utterance can serve as a suggestion pragmatically, instead of a command realised by the imperative sentence. Therefore, the particle can be used when the speaker desires to be polite as a means not to offend others. In general, the use of the particle is obligatory when the speaker tries to create a polite environment. However, we note that it is possible for the strength of utterance to be weakened with the help of intonation even when there is no particle attached. As a consequence, the claim might be too strong that the particle *ā* is directly implicated in lessening the forcefulness of utterances, for the sake of politeness.

Let us recall again the example in which a father urges his son restlessly to finish off his food as soon as possible. Consider the strength of the utterance in the following example:

(76) Bàba: Kuài qù chīfàn.
quick go eat-meal

Érzi: Wǒ bǎ fàn chī wánle **ā**.
1SG dispose meal eat finish-PFV PART

Father: Go to eat your meal, quickly.

Son: I have already finished my meal **ā**.

In (76), a possible scenario for the speaker's being polite may be that the utterance with the particle used is intended to serve as a gentle reminder. In principle, the sentence could be uttered in a mild tone. In this case, the softening effect is realised to reduce the intensity of confrontation between the father and son. However, there can be other scenarios. We notice that a common scenario can

lead the degree of forcefulness to the strong side of the scale. Suppose the father and son in the above example did not get along with each other. The boy could thus respond with a hostile attitude to reveal his impatience. Here, an aggressive intonation could be encoded in the sentence. In such a context, the effect of the particle appears to strengthen the forcefulness of the utterance.

It is clear that the particle is not solely responsible for the utterance being perceived as strong or weak in respect of its forcefulness; rather, it interacts with the context of utterance. The particle *ā* is in fact optional, in the sense that the realisation of personal justification towards the strength of a proposition varies on the basis of pragmatics. As a consequence, we suggest that the softening effect should not be counted in the core properties of the particle *ā* by virtue of the fact that it is evident only in restricted situations.

4.2.2 Contrasting effects

Another discourse effect licensed by the particle *ā* we would like to focus on is that the particle is applied by the speaker to register disagreement. This **disagreement effect** has been extensively discussed in previous studies (see Li, 2006; Lin, 2014b; Lee, 2004). As was discussed, both interpretations of disagreement and unexpectedness can be found in the observed data. Logically, it is reasonable to assume that both characteristics can co-occur in a sentence. Both interpretations concur to be semantically encoded in the particle.

Let us repeat a previous example that a father is suspicious of his son's violating some regulations. In this country, it is unacceptable for children under certain age to skip any of their meals in a day, for the sake of health. Consider how the son denies his father's accusation:

(77) Bàba: Kuài qù chīfàn.
quick go eat-meal

Érzi: Wǒ bǎ fān chī wǎnle **ā**.
1SG dispose meal eat finish-PFV PART

Father: Go to eat your meal, quickly.

Son: I have already finished my meal **ā**.

In example (77), when the father tries to issue a complaint about his son not finishing off his meal yet, the son responds with an aggressive attitude to emphasise that he does not agree with what his father says and that he would not follow what his father commands. In other words, it is unexpected to the son that he was accused by his father of breaking the law. Given that the use of the particle is to reflect the speaker's disagreement, we have to extend its previous definition. That is, when the particle is applied, the purpose of it is not directly registering disagreement, such as by explicitly saying out loud 'I do not agree with you'. The disagreement is in fact not reflected by the particle itself. Instead, the particle is used to express the unexpectedness of the preceding context to the speaker, and such a state of mind is a result of their disagreement with what is uttered.

Let us look at another example in which the particle is used in a different context. Suppose a couple of friends are discussing the financial status of their best friend, Wangwu. Both interlocutors know that their friend is exceptionally rich. Consider the following example:

(78) Zhāngsān: Wángwǔ yǒu hǎoduō hǎoduō pǎochē.
PN POSS many many sports-car

Lǐsì: Tā hěn yǒu qián **ā**.
3SG very POSS money PART

Zhangsan: Wangwu has got so many sports cars.

Lisi: He is very rich **ā**.

In (78), Lisi does not disagree with what Zhangsan says; on the contrary, Lisi is agreeing with Zhangsan but pointing out that 'He is very rich' is an obvious reason that 'Wangwu has got so many sports cars'. On the face of it, it would appear that the particle *ā* is encoding an attitude of agreement rather than disagreement here.

However, looking at this example more closely, we see that Lisi's attitude is not wholly one of agreement. Is it possible that Lisi at once agrees with what Zhangsan says, yet finds it unexpected? A possible explanation of this would be that Lisi takes Zhangsan's utterance to implicate surprise at the fact that Wangwu has many sports cars. Given that Wangwu is rich, Lisi in turn responds with surprise that Zhangsan would implicate such a thing. This would explain how Lisi could agree with the content of Zhangsan's utterance and yet be surprised by the fact of it having been uttered.

As a consequence, we have to revise the definition once more. In general, when the particle is applied, the purpose of it is to point out 'What happens is not what I think' and this is 'unexpected' to one. Rather than characterising this as an effect of disagreement, we propose to call it an effect of **contrast**. In some sense, disagreement indicates unexpectedness, in that we do not expect our interlocutors to speak falsely; but not all unexpectedness involves disagreement in a semantic sense. 'Unexpectedness' implicates 'disagreement', but not the other way round. That is, what happens can be unexpected to one, but it is not necessary the case that one disagrees with it. Instead, they can be happy with it. Therefore, the sense of unexpectedness is a result of the contrasting circumstance that is either from what is said at the sentence level or from what is implicated at the discourse level. To determine either what is said or what is implicated the speaker refers to, the listener has to rely on the shared knowledge in their common ground so as to make the correct inference.

4.3 Particle ǎ

The particle *ǎ* has often been considered to be a pitch variant of the particle *ā* in spoken Mandarin. It is claimed that they are in general complementary distribution (Chu, 2002; Li, 2006; Lin, 2014b; Wu, 2004). In the written language, these particles cannot be discriminated by virtue of the fact that they are represented in an identical logogram. Although the former is of mid tone with a slight fall and the latter of high level tone, they are not treated as tonemes

with different meanings in the literature. A toneme is a phoneme distinguished from another only by its tone. It is important to note that distinct tones are different from various realisations of a tone as a result of tone sandhi. Tone sandhi is a phonological change triggered by adjacent words, which will not affect the meaning of a linguistic item as tonemes do (Chen, 2000). In Mandarin, this process of assimilation in general takes place from left to right (Lin, 2007; Duanmu, 2007).

This section looks at modal and discourse properties of the particle *ǎ*, which may help us to be able to determine whether or not the particle *ǎ* of contour tone and *ā* of level tone are in fact distinct realisations of the same particle – that is to say, allotones[25]. Here, we aim to argue that these are in fact distinct particles, and then go on to characterise how they differ.

4.3.1 The fundamental modal property

On the basis of the research of Li (1999) on Taiwanese UFPs, Chu (2002) and Wu (2004) suggest that the particles *ǎ* and *ā* are pitch variants of one particle, denoting an identical meaning. They are used to reduce the forcefulness of an utterance or to indicate the speaker's certitude and disagreement towards the propositional contents of the sentence. Later on, Li (2006) proposes that this phenomenon of pitch variation can be extended to other UFPs in Mandarin and other Chinese languages. Overall, the pitch variants of particles are considered to be allotones with the same meaning, from the perspective of the monosemic minimalist account.

However, the phonological phenomena between UFPs in Taiwanese and in Mandarin appear to be different. Recall the analysis of Li (1999), in which Taiwanese UFPs undergo a phonological change that is triggered by their neighbouring words. Let us transcribe tonal diacritics of the particles *āh* and *àh* and their adjacent words *tshâ* [wood] and *huè* [stuff], as in (79) and (80) respectively, into Chao Tone Letters[26] for the convenience of our analysis of

[25] An allotone is a tonic allophone (Lin, 2007; Duanmu, 2007).

[26] 1 represents bottom tone, 2 low tone, 3 mid tone, 4 high tone and 5 top tone.

the respective tones. Consider the outcome of assimilation taking place in the following Taiwanese examples:

(79) Phuà tshâ **ā̍h**.
chop wood PART
'Chop the wood **ā̍h**.'

(80) Siánn huè **à̍h**.
what stuff PART
'What is this stuff **à̍h**?'

Note that the Taiwanese particles *ā̍h* and *à̍h* have a neutral tone before tone sandhi, which are simply represented as *a̍h* without any diacritics. The neutral tone of the particle in both examples would be realised as mid level tone as in $a̍h^{33}$ and mid falling tone as in $a̍h^{31}$ after the process of assimilation given their neighbouring phonological environments of low rising tone as in $tsha^{24}$ and mid falling tone as in hue^{31}, respectively, on the basis of Kaohsiung dialect, in the southern part of Taiwan. Clearly, the tones are realised as more similar to their nearby sounds, with no meaning changed. This, however, is not the case for Mandarin UFPs. Consider:

(81) Shì shéi shuōde **ǎ**?
COP who say-STR PART
'Who said it **ǎ**?'

(82) Shì shéi shuōde **ā**?
COP who say-STR PART
'Who said it **ā**?'

Compare (81) with (82): the particles *ǎ* and *ā* occur in an identical phonological environment, with no tone sandhi of the kind imposed on Taiwanese UFPs. That is, the adjacent words appear to have no impact on the realisation of these particles' underlying tones. Thus, the realisation of the particle as *ǎ* or *ā* is not purely conditioned by syntactic and phonological factors. But should the particle *ǎ* be treated as distinct from the particle *ā* in respect of its meaning contribution?

Yang (2017) proposes that the particles *ǎ* and *ā* should be associated with different meanings on the basis of their semantic properties. Their presence has made the compositional meaning of the respective sentences divergent from one another. The former is said to indicate an emphasis of surprise on the part of the speaker, and the latter to make a reaffirmation of the propositional contents that the listener should be familiar with. However, in the light of **Section 4.1.1**, this analysis is questionable that both indications of surprise and reaffirmation can be considered to be associated with the organisation of common ground, in which interlocutors have access to. These proposed meanings are not completely reliable for telling apart this minimal pair given that the particle *ǎ* is likely to bear a resemblance to the sense of surprise as the particle *ā* does. We will come back to this in the next section.

Furthermore, the particle *ǎ* is reported to frequently collocate with exclamation-related adverbs such as *zhème* [so], *duōme* [how] and *hǎo* [very]. The particle of mid tone with a slight fall and degree adverbs are two essential elements to form exclamative sentences in Mandarin. Note that it is not implausible for the unexpectedness-oriented particle to be present in exclamatives by virtue of the fact an exclamatory sentence is in general an emphatic form of statement that expresses the speaker's emotion in terms of their surprise. A further discussion of the phenomenon of attaching the particle to exclamative sentences will follow afterwards.

Given its frequent distribution in the exclamatory construction, we are inclined to assume that the sense of unexpectedness may also play an important role in the essence of the particle *ǎ*. Before getting into the details of it, we would like to recall that having overlapping meanings between different MPs is in fact not uncommon, from a crosslinguistic point of view. As discussed in previous chapters, the middle particles *ja* and *doch* in German can be used to encode a similar interpretation in terms of their modal meaning. Examples are repeated as follows:

(83) Komm **ja** nicht wieder erst so spät nach Hause.
come PART NEG again only so late to home

'Don't be home so late again [**ja**].'

(84) Bei mir sind **doch** morgen Handwerker in der Wohnung.
at 1SG COP PART tomorrow builders in the apartment
'There are builders in my apartment tomorrow [**doch**].'

In both examples, the particles *ja* and *doch* are employed by the speaker to indicate that the marked proposition should be known to the listener. The particles work as a reminder to point out the known information should be accessible in the common ground between the interlocutors. It is suggested that the difference between these particles lies in that *doch* in (84) associates with a salient focus that contrasts with what the speaker believes, while *ja* in (83) does not render such an interpretation (see Döring, 2016). However, it is not necessary for us to assume that this is a universal case to all the languages to have particles with shared meanings. Instead, it can be presented as crosslinguistic evidence to serve as a reminder that it should not be uncommon for partial properties of different particles to be overlapped.

Back to our discussion of the fundamental properties of the particle *ǎ*, we aim to find out whether or not there is any evidence that can be used to reject the denotation of the particle to be the sense of surprise. Let us look at a previous example in which a couple of friends are talking over their friend's personal property. The example is repeated as in (85), and the particle *ā* is substituted by *ǎ* as in (86). Note that, in order not to unnecessarily complicate our explanation of modal properties, we intend not to focus on too much detail of how the speaker manages the common ground. We will render a more detailed discussion of it in the next section. The important point here is that the particles require different circumstances for their felicitous use. Consider the following examples:

(85) Zhāngsān: Wángwǔ yǒu hǎoduō hǎoduō pǎochē.
PN POSS many many sports-car

Lǐsì: Tā hěn yǒu qián **ā**.
3SG very POSS money PART

Zhangsan: Wangwu has got so many sports cars.

Lisi: He is very rich **ā**.

(86) Lǐsì: Tā hěn yǒu qián **ǎ**.
3SG very have money PART
'He is very rich **ǎ**'.

As was discussed, the particle *ā* in (85) is used by the speaker to express an attitude of unexpectedness. To be more specific, Lisi did not expect that Zhangsan would report this information.

By contrast, in (86), it is the literal content of Zhangsan's utterance that is unexpected to Lisi. Specifically, Wangwu's having many a sports car is unexpected to Lisi. The use of the particle serves to contrast the assertion of Zhangsan. Similar to what is suggested for the particle *ā*, the particle *ǎ* reflects a sense of **unexpectedness**. It is important to note that Lisi's unexpected attitude can be a result of Lisi's innocence of Wangwu's financial stature or Lisi's innocence of Wangwu's extravagance. There can be other possibilities as well. Nonetheless, this involves much of the knowledge organised in the common ground. We will return to this question in the next section.

Let us consider another example that was shown earlier. A presidential candidate, Hsiuchu Hung, was at an interview, in which a journalist pointed out a fact the candidate was not happy with. In this example, we substitute the particle *ā* in the original example with the *ǎ*. Consider:

(87) Jìzhě : Dǎng zhōngyāng chuánchū, ruò míndiào bù jiā jiù
party centre say if poll NEG good then

bī tuì.
force back

Hóng Xiùzhù: Shì shéi shuōde **ǎ**? Shì shéi yǒu zhège shēngyīn
FOC who say-STR PART FOC who POSS this voice

ǎ? Rúguǒ yǒu rén jiǎng zhège huà jiù qǐng
PART if EXT human say this speech then please

tā zhàn chūlái shuō: 'Wǒ jiǎngde'.
3SG stand out say 1SG say-STR

Journalist: The party says you will be replaced if the poll rating is negative.

Hsiuchu Hung: Who said it **ǎ**? Who has this kind of opinion **ǎ**? If someone has said such a thing, I ask them to stand out and say: 'I said it'.

In (87), Ms Hung was not happy with what the journalist said. She could not believe there was such a rumour against her. Similar to the previous example in which the particle *ā* is used, what is said directly leads to the unexpectedness of Ms Hung rather than what is implicated. The interpretation of unexpectedness may result from a number of possibilities. For example, Ms Hung believes that she is the best candidate who will win the election, so the replacement of her is totally a joke.

On the basis of empirical data, we suggest that both the particle *ǎ* with contour tone and its counterpart of the particle *ā* with level tone can both be applied to a sentence for the purpose of signalling unexpectedness. However, the particles differ in where they locate this unexpectedness. For the particle *ǎ*, the speaker points out that what is said is unexpected to them. On the other hand, both what is said and what is implicated can be contrasted by the speaker when the particle *ā* is present. By analogy with the case of *ja* and *doch* in German, the overlap of features between the two particles is not surprising, even on an analysis under which they are distinct items. However, it does raise the question of how precisely we can characterise their difference in meaning. In the following, we aim to offer a comprehensive discussion of how the common ground is organised after the particle *ǎ* takes place, which may be seen as a significant factor for telling apart these two similar particles.

4.3.2 The source of knowledge

By virtue of the fact that the particle *ǎ* is widely used in the exclamatory construction in everyday conversation, we will first look into its ways of organising the common ground when the particle with contour tone is present in an exclamative. We aim to see how propositional contents are conveyed in an unexpected situation by language users. Suppose a person is making an exclamation after seeing a Formosan cypress, a slow-growing and long-lived coniferous tree endemic to Taiwan. Consider the following example:

(88) Duōme měide shù **ǎ**!
how beautiful tree PART
'How beautiful the tree is **ǎ**!'

In example (88), the existence of the marvellous tree has licensed the use of the particle, alongside a scalar adverb, to form the exclamatory expression. The presence of the particle serves to indicate that it is unexpected to the speaker to be seeing such a beautiful Formosan cypress in person. Note that what is seen can also be seen as a trigger for the use of an indicator of unexpectedness, just as what is said can be. The particle's presence is in fact not confined to the **linguistic context** or **physical context** alone, but can be triggered by either. As for the scalar adverb, it is employed in the utterance in order to express a strong feeling on the part of the speaker. Its combination with the particle contributes to an emphasised unexpectedness towards what has been experienced.

Unlike the particle *ā* that indexes an intersubjective source of knowledge, the particle *ǎ* seems not to directly associate the utterance the particle is attached to with shared knowledge or with world knowledge. In other words, the utterance that is highlighted by the particle does not function as an indicator of intersubjective information for the purpose of reminding the listener that the proposition should be accessible in the common ground to the listener and/or to others. Instead, language users make use of the particle to relate the utterance to their **personal experience**. For example, one can express their sense of unexpectedness towards the incredible cypress in the above example simply because they have yet to see such a gigantic tree in their life.

As pointed out by Lin (2014b), the utterance influenced by one's personal experience is suggested to be **speaker-oriented**. Specifically, the assertion is directed to the speaker themselves when the particle *ǎ* is present. It is emphasised that the speaker who should be solely responsible for the commitment to the truth of the proposition. For example, what the speaker utters in the above example shows their personal amazement caused by the tree, which is not necessarily relevant to the listener or anyone else. However, the concept of speaker orientation in the analysis seems to be unfairly broad. If the sentence in question is uttered by adding an additional *yes* in front of the sentence as a response to agree with what others said, it may be far-fetched to suggest that the speaker is the only person to hold accountable for the truth of the proposition. It appears to be redundant in this case for the speaker to take effect to claim that it is their responsibility for their own utterance.

The idea of speaker orientation centres on what the speaker utters, namely what the speaker utter is speaker-oriented when the particle is present. In the light of the analysis in the **Section 4.1.2**, we posit that the speaker uses the particle to point to where the source of knowledge is from. That is, the speaker applies the particle *ǎ* to express a sense of unexpectedness, which is a result of 'What happens is not what I think'. Furthermore, such an unexpected attitude results from the speaker's personal experience, namely the **subjective** source of knowledge the speaker has. Therefore, what the speaker utters is to point out an unexpected fact which is licensed by a result of their subjective knowledge.

So far, we have discussed how the organisation of subjective and intersubjective knowledge in the common ground may play a role in explaining the differences and similarities between the particles *ǎ* and *ā*. However, in order to make sure that the use of the particle *ǎ* is to reflect subjective knowledge, we have to exclude the possibility that the sense of subjectivity might be derived from certain constructions such as the exclamation rather than being derived from the particle itself. Consider the following example, where Zhangsan discloses Wangwu's wealth to Lisi:

(89) Zhāngsān: Wángwǔ yǒu hǎoduō hǎoduō pǎochē.
PN POSS many many sports-car

Lǐsì: Tā hěn yǒu qián **ǎ**.
3SG very POSS money PART

Zhangsan: Wangwu has got so many sports cars.

Lisi: He is very rich **ǎ**.

The particle *ǎ* in (89) marks its attached utterance as a result of subjective reasoning. To be more specific, the speaker does not expect Wangwu's possession of many expensive vehicles on the basis of their personal experience, for example because Lisi did not previously have evidence that Wangwu is rich. Therefore, Wangwu's being rich is fairly unexpected to Lisi on the condition of Lisi's subjective knowledge. That is, Lisi deduces this on the basis of the information that Zhangsan has just provided.

Let us take a look at the above example again. The absence of the particle *ǎ* as shown in (90) and the substitution of the particle *ǎ* with *ā* as shown in (91) have an impact on the interpretation of the subjective unexpectedness that is licensed by the use of the particle *ǎ*.

(90) Tā hěn yǒu qián.
3SG very POSS money
'He is very rich.'

(91) Tā hěn yǒu qián **ā**.
3SG very POSS money PART
'He is very rich **ā**.'

When the particle is absent, the fundamental modal property and source of knowledge are not pointed out. That is, Wangwu's being rich is hardly to be interpreted as either unexpected or (inter)subjective when no additional information is readily available. On the other hand, Wangwu's being rich is considered to be intersubjectively unexpected rather than subjectively unexpected.

The empirical data demonstrate that the use of the particle *ǎ* is to point out the sense of unexpectedness on the part of the speaker as a result of the speaker's subjective knowledge. At this point, it is clear that the sources of subjective knowledge and intersubjective knowledge serve as a determining factor of pointing out the difference between the particle with contour tone and the particle with level tone.

4.3.3 Restrictions on sentence types

In the literature, the particle *ǎ* has been reported to be used as an interrogative particle. If the particle is attached to a declarative, the declarative force of the utterance will be turned into an interrogative force (see Chu, 2009; Lin, 2014b; Wang, 2013; Wu, 2004). Nonetheless, on the basis of our data shown in the study, we note that not all the uses of this particle are to ask questions, especially given that the usage of this particle is also attested in interrogatives. Given that interrogatives are in general a construction that has the force of question, it seems to be redundant if we need another particle to function as an interrogative particle for the same purpose. More generally, we have argued on the basis of Mandarin and crosslinguistic data that the use of the particle *ā* with level tone is constrained by considerations of meaning rather than syntactic form. We propose that the same is true of *ǎ* with contour tone, as well as other Mandarin UFPs. For this reason, we are tempted to assume that syntactic constraints should not be applied to the use of particle *ǎ*, as a general feature for Mandarin UFPs.

Up to now, there is insufficient evidence of syntactic constraints on the use of the particle *ǎ*. On top of the data showing that the particle *ǎ* can be present in a declarative, an interrogative and an exclamative, we also note that the particle is widely used in imperatives. The use of the particle does not make the sentence it attaches to ungrammatical. Consider the following example, where a person saw that their friend was busy working on an essay that would be due soon:

(92) Nǔlì gōngzuò **ǎ**?
hard-work work PART
'Work hard **ǎ**?'

In (92), looking at the imperative closely, one may argue that this expression is not to give an authoritative command such as 'You need to work hard'. Rather, it is used to produce a declarative question such as 'You are working hard?'. That is to say, it might still be possible to defend the idea that *ǎ* cannot occur with imperatives, by arguing that it should be analysed as an elliptical declarative rather than a true imperative. We still have to address the reason why the combination of imperatives and the particle *ǎ* is not acceptable.

Let us reconsider the above example with a different setting. Suppose that Lisi is working on a project which has an imminent deadline, but Lisi has forgotten about this deadline. Zhangsan, with the deadline in mind, then utters *Nǔlì gōngzuò* to command Lisi to work hard. Lisi could respond with (92) to convey his confusion at being asked to work hard. In this case, it appears appropriate to analyse the core of (92) as an imperative rather than a declarative.

The sentence, therefore, should be considered to be an imperative, syntactically, provided it is not a result of omission. We then suggest that such an imperative with the particle *ǎ* applied can be seen as a declarative question as a result of pragmatic strategy. Crosslinguistically, it is not uncommon for an interrogative to pragmatically function as a command, or an imperative as a question. For example, in English, an interrogative sentence such as 'Can you pass me the salt?' can be considered to be a request, as for the purpose of an imperative sentence. With proper prosody, an imperative sentence such as 'Work hard?' can serve to ask a question. Note that intonation may be less free to be utilised to impose pragmatic meaning on Mandarin sentences by virtue of the fact that Mandarin is a tonal language where any changes of pitch for the sentence may have an impact on the lexical meaning of the linguistic items in the sentence. Therefore, in Mandarin, the particle *ǎ* can be seen as a tool to code a rhetorical meaning. More details of its rhetorical function will be offered in the next section.

At this point, based on our analysis of the restrictions on sentence types when Mandarin UFPs are present, we suggest that there are no syntactic or phonological constraints on the uses of the particles *ǎ* and *ā*. As a consequence, the presence of them will be influenced by meaning, rather than grammaticality.

4.4 The effects of ǎ in discourse

In this section, we aim to offer a comprehensive discussion of whether or not the effects of issuing sarcasm and soliciting agreement are derived out of the particle itself as is claimed in the literature. If this is the case, these discourse properties would have an impact on the interpretation of sentences with the particle *ǎ* employed. Otherwise, they should be regarded as personal evaluations towards utterances for the purposes of pragmatics. Once again, it is important for us to bear in mind that interpretive bias may be easily derived from isolated sentences. Therefore, paying extra attention on the context is required.

4.4.1 Sarcastic effects

On the basis of the description of Sperber and Wilson (2001), Lu (2005) explains that an utterance can be considered **sarcastic** when one makes an assertion which they do not agree with deep in their heart. By virtue of the fact that the particle *ǎ* can be applied in an unexpected situation where the speaker holds an opposite point of view to what is said by others, the utterance with the particle used is said to have a sarcastic effect. Suppose a person utters a sentence with the application of *ǎ* in response to their colleague's showing off the number of clients they have. Consider the extracted example from Lu (2005) as follows:

(93) Nǐ zhēn nénggàn **ǎ**.
2SG surely talented PART
'You surely are talented **ǎ**.'

It is reported that the utterance, as in (93), can be given as a sincere compliment if the particle is not in use. With the particle employed, the speaker leads the listener to an implication that they do not believe the content of their assertion, and instead having the intention of ridiculing the listener (see Garmendia, 2018). That is, the praise of their colleague's being talented is in fact not true, in the sense that the speaker does not truly think so in their mind.

However, with more data examined, it appears that the sarcastic effect does not cover all the uses when the particle in question is present. A possible

interpretation found in a counterexample shows that the speaker applies the particle to indicate a sense of unexpectedness so as to express that what their colleague achieves simply amazes them. To be more specific, being surprised at their colleague's talents does not necessarily mean that they personally deny the remarkable skills their colleague has. The subjective unexpectedness and appreciation on the part of the speaker can in fact be interwoven with the propositional contents. Logically, they are not in conflict with one another in terms of their semantic properties. The sentence can hence be treated as an exclamative to express a strong feeling of support. Conversely, the omission of the particle does not guarantee the absence of sarcastic intent on the part of the speaker. For example, as long as the speaker utters the sentence with proper prosody, the sense of sarcasm can be reflected.

As pointed out by Campbell (2012), one makes use of sarcasm to mock or irritate someone for a humorous or negative purpose. In order to make the use of mockery or irritation meaningful, the listener has to be aware of what the speaker implicates can be readily accessible in the common ground. When the speaker implicates, the listener has to infer accordingly. For instance, the sarcastic effect of (93) may arise because the speaker mentions a proposition that they take to be part of the listener's ground, namely that the listener is highly talented (see Sperber & Wilson, 1981). The sense of sarcasm is in fact largely context-dependent in the discourse. However, the subjective interpretation appears not to produce sarcasm. That is, when the particle is used, it simply reflects an unexpected sense towards what is said or what is shown in the context. It is the way the speaker presents the message that leads to the sarcastic interpretation.

Therefore, we suggest that the effect of sarcasm does not come along with the particle *ǎ* automatically. Instead, such an interpretation can be taken out of all sorts of possible circumstances in the discourse provided that both parties of conversation have proper access to the knowledge that is considered to be shared. For the effect to succeed, one has to employ appropriate rhetorical techniques, which may involve the use of UFPs but do not obligatorily do so.

4.4.2 The particle ǎ as a rhetorical device

The employment of the particle *ǎ* on a sentence is often said to change its declarative force into an interrogative force, as was discussed in **Section 4.3.3**. Specifically, when the particle is present, there can be two types of questions formed in response to a piece of information triggered by previous context, which are treated as fundamental properties of the particle. First, the particle can be attached to a declarative sentence, which serves as a question marker just as the particle *mā* does. Second, the particle can be directly added onto an interrogative sentence. Wu (2004) suggests the former as **ǎ-formulated question** and the latter **ǎ-attached question**[27].

Nonetheless, on the basis of empirical data, we have explained that it may be far-fetched to claim that the declarative might be turned into an interrogative when the particle is present. First, the particle in question is widely applied to the exclamative construction to express unexpectedness of the speaker, in which the sentence is not treated as an interrogative. Second, if the particle serves as an interrogative particle, it might be tricky to explain how the interrogative force from the particle can be combined with another interrogative force that is included in the interrogative sentence.

As was discussed earlier, the presence of the particle works to turn the assertion into a question pragmatically but not syntactically by virtue of the fact that it is not uncommon to use a wide range of pragmatic strategies to form a question. The sentence is still considered to be a syntactic declarative. For example, one can raise the intonation at the end of a declarative sentence in English or lengthen a lexical tone where they attempt to cast doubt on part of the proposition in the declarative sentence in Mandarin.

Given the importance of common ground in the use of UFPs, as discussed in **Section 4.1.2**, we aim to discuss how his applies to the case of *ǎ*. Suppose a couple of friends are watching a tennis game, the final of Women's Singles at the 2018 US Open. The 20th seeded Japanese player, Naomi Osaka, is taking on the

[27]We apply its corresponding diacritical symbol cǎron to the low pitch particle that is used in the study of Wu (2004) in order to avoid the confusion between the similar particles with contrasting tones.

well-known former world number one representing the US, Serena Williams, who has already won 23 Grand Slam singles titles and has been ranked world number one for 319 weeks in total. Consider the following conversation which takes place when the match is done:

(94) Zhāngsān: Dàbǎn Zhíměi jìngrán yíngle Xiǎo Wēiliánsī!
PN to-one's-surprise win-PFV PN

Lǐsì: Dàbǎn Zhíměi shì shéi **ǎ**?
PN COP who PART

Zhangsan: I cannot believe that Naomi Osaka defeated Serena Williams!

Lisi: Who is Naomi Osaka **ǎ**?

In (94), the word *jìngrán* [to one's surprise] conveys the unexpectedness of the result to Zhangsan. Lisi's response also conveys surprise which is reflected by the use of the particle. However, what surprises Lisi is not what Zhangsan says, but Lisi's subjective point of view leads him to the same conclusion. That is, Lisi is also surprised at the result of the match, rather than being surprised by Zhangsan's surprise. This contrasts with the first version of the 'He is very rich' example, as was discussed in **Section 4.3.2**. The subjective unexpectedness is licensed by such a shocking result due to their individual assumption. The particle can be seen as a rhetorical device that is used to provoke an emotional response in the audience. The interrogative Lisi makes with the particle attached does not merely serve to seek information.

Clearly, the rhetoric-oriented question containing the particle *ǎ* differs from the question with a question marker used, in the sense that they are formed for different purposes. That is, the question marker, such as *mā* in Mandarin, helps to turn the declarative force into an interrogative force so as to solicit information. In general, a question formed by the use of *mā* is seen as a **general question**[28] seeking information that is not known to the speaker (see Caponigro & Sprouse, 2007). When such a question is provided, the answer is

[28]The terms **genuine question**, **ordinary question** and **regular question** are also used in the literature, which can be roughly seen as interchangeable.

often **unpredictable**. On the other hand, the question with the particle *ǎ* used is imposed on the speaker's particular attitude on a topic, which sometimes makes its answer **predictable**. For example, the question made by Lisi in the above example can select an **empty answer**, meaning there is no information required. We consider this expression to be a **rhetorical question** licensed by the particle. As a consequence, the speaker is making a request for confirmation to update the common ground rather than seeking genuine information. Bearing in mind that such a complaint in this example is only one of the possible interpretations. The exact interpretation always varies from context to context.

In order to examine whether the use of this particle can be considered to yield a rhetorical question, let us consider how rhetorical questions are defined. In general, they are considered to be a question which does not either make a request for genuine information or seek an unpredictable answer, as general questions do (see Han, 2002; Sadock, 1971, and onwards). Note that it is not necessary for rhetorical questions to be presented in the form of interrogative sentences. Both declarative and imperative sentences can be used to serve as a rhetorical question.

As pointed out by Rohde (2006), when a rhetorical question is formed, there are roughly four types of response encouraged in the audience, namely **negative answer**, **positive answer**, **empty answer** and **multiple answers**. She argues that although rhetorical questions bear a resemblance to general questions, their predictable features for particular answers mentioned above makes such a question a **biased question** or **redundant question**, which is often **uninformative** under certain circumstances. On the basis of the common ground model of Gunlogson (2001), she proposes that the felicitous use of rhetorical questions largely relies on shared commitments in the common ground. By using these questions, interlocutors can confirm or synchronise their shared beliefs and then update them in the common ground. Furthermore, based on the analysis from the corpus of Switchboard, Rohde (2006) shows that most responses to rhetorical questions are either making confirmations or interjecting backchannels, which suggests interlocutors deploy rhetorical questions to seek agreement from their participants in the discourse for updating the common

ground.

However, not all rhetorical questions are rigidly uninformative. It is not uncommon for language users to make use of rhetorical questions to request information as long as they are used felicitously. Let us reconsider the above example. The particle *ǎ* is used in an interrogative. On the one hand, the particle is used to make a point with the goal of guiding the listener towards a topic from a certain point of view. On the other hand, the interrogative has the force of a question in that it requests information, which is expected to be provided in the form of an answer. These analyses are in fact not contradictory to one another. For example, Lisi can make a complaint of the unexpected result, and, in the meantime, be curious about who the winner is and where the person is from and so on. By virtue of the fact that the particle *ǎ* serves as a technique to convey a particular meaning to the listener, we suggest that it is a **rhetorical device**, which is different from an interrogative particle that is used to ask a general question.

4.5 Modal combinations of ā and ǎ and their quantificational force

In this section, we examine combinations of the particles *ā* and *ǎ* with other modal items in Mandarin and elucidate their quantificational force, attempting to provide a more complete account for the use of UFPs.

In some languages, modal particles can co-occur with each other, both in the middle field and in the final field, provided that they share certain properties with one another (see Grosz, 2010a; Liu, 2015b). They are sometimes said to be categorised into the same family of particle because of their shared features (see Fung, 2000). It is important to note that the patterns of combination are often fixed rather than formed in a random order. Consider the German example extracted from Grosz (2010a) (particles appear in the middle field) as in (95) and the Cantonese example extracted from Liu (2015b) (particles appear in the final

field) as in (96)[29]:

(95) Sie sind **ja** **doch** ein Akademiker.
2SG COP PART PART an academic
'You are **ja doch** an academic.'

(96) Yùhgwó yiu tō, jeui dō tō dō golèhng yuht **tīm** **gaa** **zaa** **bo**.
if want delay most more delay more CL-zero month PART PART PART PART
'If you want to delay, you can delay for one month at most **tīm gaa zaa bo**.'

In the above examples, the order of particle clusters is fixed in both languages. When particles co-occur in the middle field in German, and in the final field in Cantonese, they are required to be kept in a specific order. In addition, the number of particles permitted to be stacked in one sentence is argued to be limited to four (Liu, 2015b).

By contrast, in Mandarin, utterance-final particles cannot be combined in the same sentence. However, Mandarin UFPs can be combined with other modal items. Little research has been done in the literature. Furthermore, although UFPs are considered to be a member of MPs (see Alleton, 1981; Chappell, 1991; Chu, 2009; Lepadat, 2017; Yang, 2003), few studies focus on their modal force.

Generally, modal items can roughly be categorised into two major groups in terms of their modal force: **necessity** and **possibility**, which concerns how likely a proposition is true or how likely an event is to take place (see Grosz, 2010b; Horvat, 2017; Kratzer, 2012; Lyons, 1977; Turnbull & Saxton, 1997). In addition to necessity and possibility, **probability** is sometimes taken into account as a ternary base for the modal force (see Van der Auwera, 1996), which is not considered in this study. If categories other than necessity and possibility were to be taken into account, more layers should be required given that modal force is a continuum of quantificational force. For the present purposes, we restrict our attention to the binary system.

[29]This example is written in Yale Romanization of Cantonese.

Recall that the degree of likelihood of a proposition or an event can be seen as a number between 0 and 1, where 0 roughly denotes impossibility and 1 roughly denotes certainty. In this study, in line with other researchers such as Kratzer (2012) and others, we suggest that the quantificational force of necessity and possibility for UFPs lies between 0 and 1 with respect to the degree of likelihood, where the likelihood of necessity is higher than that of possibility. Specifically, in terms of their modal force, the former is considered to be **strong** because it is comparatively close to 1, and the latter to be **weak** for being close to 0.

An issue arises as to whether this binary classification is sufficient to account for the subtle difference between two modal items that are under the same category of the degree of likelihood. For example, both modal phrases *have to* and *ought to* in English are claimed to be included in the category of necessity (see Matthewson, 2016; Turnbull & Saxton, 1997; Von Fintel & Borchert, 2006). However, the quantificational force of these two items appears to be slightly different. Consider the following examples:

(97) During the coronavirus pandemic, customers in shops **have to** wear a mask that covers their nose and mouth and keep a physical distance to 2 metres away from anyone they do not live with.

(98) During the coronavirus pandemic, customers **ought to** wear a mask that covers their nose and mouth and keep a physical distance to 2 metres away from anyone they do not live with.

Despite the fact that customers in both examples are required to do a few things in order to avoid spreading the severe infection, it can be easily seen that the modal force is different. The quantificational force in (97) appears to be stronger than in (98). In other words, these two modal expressions differ in strength when in use. A scale can thus be introduced to distinguish the modal strength from **strong** to **weak** (see Portner, 2009; Rubinstein, 2012). On the basis of the scale of modal strength, it can be said that the modal expression *have to* indicates a **strong necessity**. On the other hand, *ought to* indicates a **weak necessity**.

It is important to note that modal strength in semantics is different from

that in pragmatics. Compare the following examples (extracted from Huddleston & Pullum, 2002):

(99) You **must** come in immediately.

(100) You **must** have one of these cakes.

(101) You **may** take your ties off.

(102) You **may** leave now.

Under certain circumstances, the modal expression in example (100) can be considered to be weaker than in (99), which is called **pragmatic weakening**. For example, when the first instance is used as a command for the listener to come in, the modal force is strong in that one's not doing so might be unacceptable. Although the latter takes in the same modal verb, the modality is likely to be seen as less strong provided that the utterance is taken as an invitation instead of a command. Conversely, (102) is likely to be stronger than (101), which is called **pragmatic strengthening**. For the first instance, the modal verb may be used to give permission with a weak force, allowing one to make their own decisions. As for the second instance, the strength of modal force will be increased. Therefore, it can be said that *must* is a semantically strong modal verb but can be pragmatically weak in certain contexts. Similarly, *may* is a semantically weak modal verb compared to *must*, but can occasionally be a pragmatically strong modal. In this study, we do not intend to concentrate too much on the modal strength in their pragmatic interpretation given that we aim to look at the grammatical property of UFPs, considering that their modal force is lexicalised.

With this in mind, let us return to our analysis of the particles *ā* and *ǎ* in Mandarin. There are a number of modal items such as modal verbs and modal adverbs that can be present in the same sentence along with the particles in question as shown in **Table 4.1**.

Consider the selected examples as follows:

(103) Zhèxiē xìnjiàn **yīdìng** yào jǐnshèn chǔlǐ **ā**.
these letters certainly need caution treat PART

Table 4.1: Modal items frequently collocated with ā and ǎ

Semantic type	Collocation items	
uncertainty	yěxǔ [maybe]	huòxǔ [perhaps]
	yīnggāi [should]	kěnéng [may]
certainty	yīdìng [certainly]	bìxū [must]

'These letters **certainly** need to be treated with great caution **ā**.'

(104) Zhèxiē xìnjiàn **bìxū** jǐnshèn chǔlǐ **ā**.
these letters must caution treat PART
'These letters **must** be treated with great caution **ā**.'

(105) Zhèxiē xìnjiàn **kěnéng** yào jǐnshèn chǔlǐ **ā**.
these letters perhaps need caution treat PART
'**Perhaps** these letters need to be treated with great caution **ā**.'

(106) Zhèxiē xìnjiàn **kěyǐ** jǐnshèn chǔlǐ **ā**.
these letters can caution treat PART
'These letters **can** be treated with great caution **ā**.'

(107) Zhèxiē xìnjiàn **yīdìng** yào jǐnshèn chǔlǐ **ǎ**.
these letters certainly need caution treat PART
'These letters **certainly** need to be treated with great caution **ǎ**.'

(108) Zhèxiē xìnjiàn **bìxū** jǐnshèn chǔlǐ **ǎ**.
these letters must caution treat PART
'These letters **must** be treated with great caution **ǎ**.'

(109) Zhèxiē xìnjiàn **kěnéng** yào jǐnshèn chǔlǐ **ǎ**.
these letters perhaps need caution treat PART
'**Perhaps** these letters need to be treated with great caution **ǎ**.'

(110) Zhèxiē xìnjiàn **kěyǐ** jǐnshèn chǔlǐ **ǎ**.
these letters can caution treat PART
'These letters **can** be treated with great caution **ǎ**.'

As shown from (103) to (106) and from (107) to (110), the particles *ā* and *ǎ* can be applied to sentences within similar linguistic environments. In these examples, the four modal items in Mandarin collocated with the particles are

yīdìng [certainly], *bìxū* [must], *kěnéng* [perhaps] and *kěyǐ* [can] respectively. The first two are regarded as necessity modals and the latter a possibility modal (see Liu, 2015b). That is to say, the former is stronger than the latter in terms of their quantificational force. This detailed information of modal strength can be useful for us to look into the modal force of both particles *ā* and *ǎ* because there appears to be a general restriction on the combination of modal items in one sentence when they are at different levels of quantification force.

On the basis of Horn scale, stronger (or higher) elements are more informative than weaker (or lower) elements. Furthermore, stronger modals entail lower modals when they are on the same scale (Horn, 1972; Levinson, 2000). In terms of the interaction of modal meanings, it is plausible to think that the UFPs' modal contribution modifies or replaces that of earlier modal content. In English we see a pattern of **weak before strong** modals, as in (112), where a stronger (and more informative) modal meaning introduced by *must* supplants the weaker meaning introduced by *should*. This is permissible because stronger modals entail weaker modals on the same scale (Horn, 1972; Levinson, 2000). Attempting to revise modal commitments in the opposite direction leads to a sense of self-contradiction, as in (111). Consider the following examples, where *should* expresses weak necessity and *must* strong necessity:

(111) You **should** wear a mask and keep a physical distance of more than two metres – in fact, you **must**.

(112) # You **must** wear a mask and keep a physical distance of more than two metres – in fact, you **should**.

As pointed out by Kratzer (2012), modals of strong necessity demand the proposition in all the accessible worlds to be true. On the other hand, modals of weak necessity demand the proposition in most accessible worlds to be true. Since the force of the first part of the sentence as in (111) has reached its maximum, it may be difficult to cancel it afterwards. In (112), the sentence is felicitous by using a weaker item at first. The strong item can readily take over the modal force the previous one has made because it is comparatively weaker.

By analogy, we might be tempted to claim that the particles *ā* and *ǎ* seem to boast a modal feature of necessity given that both modals of possibility as in (103, 104, 107 and 108) and necessity as in (105, 106, 109 and 110) can collocate with the particles in question. Recall that only a strong modal can be located in the second position when the first position is also occupied by a strong modal.

However, analysing the UFPs as strengthening a weaker modal meaning, introduced earlier in the utterance, turns out to be too simplistic. Suppose a colleague has put some confidential documents unattended on the desk right after being told to take great care of them, and their supervisor utters (104). The interpretation (104) thus should not be read as in (113), but as in (114), as follows:

(113) These letters **must necessarily** be treated with great caution.

(114) Let me **remind** you that these letters **must** be treated with great caution. It is **unexpected** to me that you left them unattended on your desk. **You are supposed to know** that it is **necessary** that you take care of these letters with great caution **because** you **were told** that they are highly confidential.

The felicitous interpretation shows that the particle *ā* does not directly impose its modal meaning on the proposition, but indirectly has an impact on it. Since the two modals in the examples do not directly work at the sentence level, but indirectly at the discourse level, we may not make use of this pattern of weak before strong to determine the modal force of the particle.

However, the detailed interpretation provides us another way to look at its quantificational force. As in example (114), if the speaker does not know that those letters are confidential and that the listener is responsible for keeping them safe, the utterance will be infelicitous. Having insufficient knowledge in their common ground makes the use of the particle infelicitous. In other words, the strength of force is likely to be strong when the speaker confidently delivers a message that is considered to be accessible in the common ground.

There is also evidence indirectly showing what the modal force of the

particle *ā* is. As pointed out by Chang (2009), the particle can be used to indicate that the speaker is being assertive. This is supported by the findings in **Chapter 2** that utterances with this particle are associated with a sense of **certainty**.

Suppose that Lisi has been hired by a company having been interviewed by Zhangsan, and they then meet at a corporate event, where the following dialogue takes place. Consider the following example:

(115) Zhāngsān: Zěnme méi kànguò nǐ, nǐ shì shéi?
how NEG see-EXP 2SG 2SG COP who PART

Lǐsì: Wǒ shì Lǐsì **ā**.
1SG COP PN PART

Zhangsan: How come I have never seen you before? Who are you?

Lisi: I am Lisi **ā**.

In example (115), the use of the particle *ā* is licensed by Lisi's surprise at Zhangsan's ignorance of his identity. If we are to treat the particle as possessing modal force, it would be surprising for it to convey anything less than necessity. In this case, it is unlikely that the speaker would cast a doubt on the proposition that relates to telling others who they are. We, therefore, suggest that the modal force of the particle should be **necessity** on the basis of the fact that the speaker is supposed to be certain to claim who they are. This is consistent with other examples shown in the study, indicating that the propositions they refer to must be logically true by virtue of the fact that the speaker has the knowledge of relevant facts.

When it comes to quantificational strength on the scale, other UFPs must be taken into account for comparison. It is important to note that the modal scale is introduced owing to the needs of differentiating the modal strength between two similar modal items under the same category of modal force. Being able to tease apart the subtleties between similar items will make a difference in interpreting the meaning of the particle. Consider the following example in which the particle *ā* as in the previous example is substituted by the particle *ō*:

(116) Zhāngsān: Zěnme méi kànguò nǐ, nǐ shì shéi?
how NEG see-EXP 2SG 2SG COP who PART

Lǐsì: Wǒ shì Lǐsì **ō**.
1SG COP PN PART

Zhangsan: How come I have never seen you before? Who are you?

Lisi: I am Lisi **ō**.

The particle $\bar{o}$ in example (116) encodes necessity that connotes speaker certainty as the particle $\bar{a}$ does. As pointed out by Wu (2004), the use of the particles $\bar{o}$ and $\bar{a}$ overlaps in many linguistic environments. On top of this, both of them are proposed to implicate stronger certainty of the speaker towards their own knowledge. However, the particle $\bar{o}$ is considered to have a friendly and less direct characteristic as a discourse element when it is in use. Unfortunately, this is insufficient for us to argue that the particle $\bar{a}$ encodes a **strong necessity** and the particle $\bar{o}$ a **weak necessity**. Further analysis is required to determine their exact quantificational for on the scale. It is important to note that we do not intend to argue that these two UFPs bear an identical property in terms of modal flavour. What we focus here is their strength of modal force.

4.6 Discourse relations signalled by ā and ǎ

In this final section, we look at what discourse relations can be licensed by the particles $\bar{a}$ and $\check{a}$. It is suggested that UFPs in Mandarin can be used to associate the current utterance with an utterance in its preceding context as a means of discourse organisation (see Chappell & Peyraube, 2015; Lepadat, 2017; Yang, 2014). These particles are similar to DPs, which serve as signposts for the listener to locate where the speaker is in the argument. When one particle is replaced with another, we can predict that there may be a change of relation between the discourse units that are connected by the particle (Haselow, 2012; Schiffrin, 1987).

On the basis of the interpretation of data from Lin (2014a) and others, we can see from their examples that the particles $\bar{a}$ and $\check{a}$ seem to be responsible

for a causal relation that is similar to the function of *because*, which signals the discourse relation of **Explanation**. Nonetheless, how exactly these particles interact with the discourse structure is largely unknown. A question arises as to whether or not there is any difference between the causal relation reflected by *because* and that by *ā*. This raises the broader question of whether or not the discourse relations signalled by UFPs are necessarily signalled in quite the same way by DPs.

Recall the sports car example in which a couple of friends are talking about the financial stature of their friend's. In example (117), the conjunctive *yīnwèi* is used by Lisi for a causal relation in order to connect the utterance to what Zhangsan says. Under the same context, we can see from the data that the particles *ā* and *ǎ* as in (118) and (119) respectively are translatable as *because*, which is fulfilling the same function that could alternatively be performed by *yīnwèi*. Consider the following examples:

(117) Zhāngsān: Wángwǔ yǒu hǎoduō hǎoduō pǎochē.
PN POSS many many sports-car

Lǐsì: **Yīnwèi** tā hěn yǒu qián.
because very POSS money PART

Zhangsan: Wangwu has got so many sports cars.

Lisi: [That is] **because** he is very rich[30].

(118) Tā hěn yǒu qián **ā**.
3SG very POSS money PART
'He is very rich **ā**.'

(119) Tā hěn yǒu qián **ǎ**?
3SG very POSS money PART
'He is very rich **ǎ**?'

In general, these three items, *because*, *ā* and *ǎ*, can all be applied to indicate that Wangwu's wealth is the reason that he has many sports cars. The only difference

[30]In this *yīnwèi* sentence, it is simply assumed that there is some contextually accessible proposition that stands as the explicandum. Hence, there is no need to point deictically to it with 'that'.

between them seems to be the interpretation of Explanation is directly marked in (117) but implicitly inferred in (118) and (119).

Let us look at another previous example where the semantic relation between the target discourse units is not straightforward. Once again, *yīnwèi* is put in the first example as in (120) while the particles *ā* is used in (121) and *ǎ* in (122). Consider how the presidential candidate responds to what the journalist says in these examples:

(120) Jìzhě : Dǎng zhōngyāng chuánchū, ruò míndiào bù jiā jiù
party centre say if poll NEG good then

bī tuì.
force back

Hóng Xiùzhù: * **Yīnwèi** shì shéi shuōde? * **Yīnwèi** shì shéi yǒu
because FOC who say-STR because FOC who POSS

zhège shēngyīn? Rúguǒ yǒu rén jiǎng zhège huà
this voice if EXT human say this speech

jiù qǐng tā zhàn chūlái shuō: 'Wǒ jiǎngde'.
then please 3SG stand out say 1SG say-STR

Journalist: The party says you will be replaced if the poll rating is negative.

Hsiuchu Hung: * [That is] **because** who said it? * [That is] **because** who has this kind of opinion? If someone has said such a thing, I ask them to stand out and say: 'I said it'.

(121) Shì shéi shuōde **ā**? Shì shéi yǒu zhège shēngyīn **ā**?
FOC who say-STR PART FOC who POSS this voice PART
'Who said it **ā**? Who has this kind of opinion **ā**?'

(122) Shì shéi shuōde **ǎ**? Shì shéi yǒu zhège shēngyīn **ǎ**?
FOC who say-STR PART FOC who POSS this voice PART
'Who said it **ǎ**? Who has this kind of opinion **ǎ**?'

It is clear to see from the above examples that UFPs and discourse relations are not mapped one to one by virtue of the fact that (121) and (122) are considered to be acceptable while (120) is not. The discourse relation of Explanation signalled by *because* appears not to fit in this case. Instead, the utterance with the particles *ā* and *ǎ* appended signifies a discourse relation of **Elaboration** towards what is said by the journalist. That is, the presidential candidate requires more information from the journalist. As pointed out by Jasinskaja & Karagjosova (2020), this type of relation holds between two discourse units where the latter in general describes the former in more detail at the same state of affairs. On its broader definition, Elaboration may also include particular relations such as Repetition, Reformulation, Specification, Generalisation and Summary (cf. Danlos & Gaiffe, 2004; Hobbs, 1985; Kehler, 2002; Mann & Thompson, 1988).

Apart from the fact that UFPs can be associated with multiple discourse relations, we have noted that how these particles license discourse units is in fact somewhat different from the way DPs do. Let us look at a previous example with regard to a father's issuing his son a warning to have a meal in which the relation between the target discourse units is less straightforward. Consider the acceptability of both examples as follows:

(123) Bàba: Kuài qù chīfàn.
quick go eat-meal

Érzi: Wǒ bǎ fān chī wǎnle **ā** .
1SG dispose meal eat finish-PFV PART

Father: Go to eat your meal, quickly.

Son: I have already finished my meal **ā** .

(124) * **Yīnwèi** Wǒ bǎ fān chī wǎnle.
because 1SG dispose meal eat finish-PFV
'[That is] **because** I have already finished my meal.'

In example (123), the particle *ā* signals the discourse relation of Explanation. However, it is unacceptable when we replace *yīnwèi* with *ā* as shown in (124). It is because the utterance with the particle *ā* used is not offered directly as

an explanation to its preceding utterance. Instead, it is connected with what is implicated by the speaker. To be more specific, the boy denies the truth of his father's word, which directly associates a discourse relation of **Contrast** with his father's ignorance. In this case, the utterance with the particle applied serves to explain the boy's non-cooperation and then offers a reason why. Therefore, we can see that the discourse relation of Explanation is not signalled by the particle *ā* between the content of the father's utterance and the son's utterance. Rather, the particle is applied to point to a deeper cause that the father should have known the fact that the son had finished his meal, as a factor explaining the statements made both by the father and son.

The absence of UFPs serves as a good example of eliminating the availability of coherence relations that are signalled by the use of these particles. Consider the following examples:

(125) Zhāngsān: Wángwǔ bǎ cǎoméi chī wánle.
PN dispose strawberry eat finish-PFV

Lǐsì: Xiàyǔle.
fall-rain-INCH

Zhangsan: Wangwu has eaten up the strawberries.

Lisi: It has started raining.

(126) Xiàyǔle **ā**.
fall-rain-INCH PART
'[That is because] it has started raining **ā**.'

In example (125), it can be difficult to reconstruct the discourse relation of what Zhangsan and Lisi said. Logically, the precipitation seems to bear no relation with one's having finished the strawberries. Without context, what relations should be reconstructed may remain unclear. On the other hand, the use of the particle *ā*, as in example (126), licenses a discourse relation of Explanation. That is, what Lisi said serves as a deeper cause explaining why Wangwu has finished the strawberries. By using the particle, Lisi purposely reminds Zhangsan of the intersubjective information stored in the common ground between them

and points out the causal relation. With the help of the particle, the particular discourse relation can be readily reconstructed by comprehenders.

Based on our observation above, we suggest that both UFPs *ā* and *ǎ* can be used to select discourse relations of Explanation and Elaboration accordingly, which is not mandatorily confined to their local context. Besides, the discourse relation of Contrast can be licensed when the particle *ā* present. However, in order to reconstruct these implicit relations in the discourse and to understand what the speaker's true intention is, the listener may make use of common ground or real world knowledge when it is necessary.

4.7 Chapter summary

In this chapter, we have looked at fundamental properties of the particles **ā** and **ǎ** in Mandarin. On the basis of their use, we suggest that **unexpectedness** is the modal flavour for both particles. Examples are provided as empirical evidence to demonstrate how the sense of unexpectedness covers the use when the particles are present. It is important to note that although both particles can relate to the same modal base, they should not be treated as allotones. Instead, they are modal items with different functions.

When these particles are attached to an utterance, each of them refers to a different source of knowledge, in the sense of how the common ground is organised between the speaker and listener. For the use of the particle *ā*, the **intersubjective** knowledge is indexed on the proposition by the speaker in order to remind the listener of such information the listener should be aware of. This source of knowledge can be either shared between both parties of the conversation or readily accessible to anyone as world knowledge. Language users make use of the particle with level tone to express their certain attitude towards the proposition. On the other hand, the particle *ǎ* is applied to the utterance to indicate the **subjective** knowledge based on the speaker's personal experience. With these UFPs used, communication can be more efficient without frequently repeating certain old information. This rather more elaborate notion of common

ground is useful not only for our interpretation of referring expressions such as sentences along with definite articles but also for utterances with enriched meaning that are licensed by UFPs.

We have also looked at potential syntactic restrictions on the uses of these particles. Given that the particles with contrasting tones can be applied to all types of sentences under proper circumstances, syntax does not appear to have an impact on the distribution of these UFPs. Instead, their felicitous use largely relies on semantics and pragmatics.

In addition to modal properties, we have discussed about what effects the particles bring about in the discourse. We suggest that the **softening** effect for the particle *ā* and the **sarcastic** effect for the particle *ǎ* should not be considered to be inherent properties, as they are context-dependent. On the other hand, **contrasting** effect for the particle *ā* and the function as a **rhetorical device** for the particle *ǎ* can be taken out of the discourse when the respective particles are used.

Later on, we have scrutinised modal harmony of the particles and their quantificational force. In general, both particles are considered to be a **necessity** modal and can be stacked with both modal items of necessity and possibility as long as they are used felicitously.

Finally, we suggest that the particles *ā* and *ǎ* are associated with particular discourse relations such as **Explanation**, **Elaboration** and **Contrast**, which serve to give a specific reason, a more detailed description and a contradictory opinion respectively. Language users can rely on these relations to understand the true intention that is marked in the discourse, which is in general supposed to be coherent.

Chapter 5

The analysis of utterance-final particles bā and bǎ

In **Chapter 4**, we discussed the semantics and pragmatics of utterance-final particles (UFPs) *ā* and *ǎ*, and described their modal and discourse properties with careful reference to the surrounding context. In general, the particle with level tone and its counterpart with contour tone have distinct characteristics that can help us to tell them apart. They should not be treated as allotones of the same variable. With this in mind, we aim to examine whether or not the methods that have been developed so far can be successfully applied to other UFPs.

This chapter focuses on the interpretation and use of the particles **bā** and **bǎ**. The particles in question are another pair of comparable UFPs that are frequently used in everyday conversation. However, the literature has paid little attention to the differences of their tones for these particles. They are often classified as one polyseme on the basis of their syntactic distributions and pragmatic functions and are considered to be a marker of politeness for face support (see Chang, 2012; Chu & Li, 2004; Han, 1995; Lee-Wong, 1998; Lu, 2005).

We start the chapter by looking at the modal properties of the particle *bā* with level tone. Next, we examine how the speaker makes use of this particle to remind the listener of the information stored in the common ground in order to achieve particular communicative goals. Before proceeding with the properties

derived from the broader discourse, we discuss the syntactic restrictions on the use of the particle. The analytical patterns mentioned above will then be applied to the particle *bǎ* with contour tone, which constitutes the second part of our discussion in this chapter.

5.1 Particle bā

As in the case of other UFPs, the literature on the particle *bā* has predominantly focused on its pragmatic functions. To offer a more complete picture of how UFPs are used to facilitate communicative interaction at both sentence and discourse level, it is important for us to pay attention to its semantic features too. In this section, we discuss the modal properties of the particle *bā* and the way it is used to organise the common ground. In addition, we discuss how the application of the particle is limited by sentence types.

5.1.1 The fundamental modal property

When particular pairs of UFPs are treated as allotones, just in the case of *ā* and *ǎ* in the preceding chapter, it may complicate our analysis given that there are many counterexamples that are difficult to explain. Different interpretations may be generated because there is more than one realisation of tones. To avoid the trouble that tones may bring about, we attempt to distinguish the pair of similar particles on the basis of their modal properties as we have done for the analysis of the particles *ā* and *ǎ* in the preceding chapter.

On the basis of Chu's (2002) research where the particles *ā* and *ǎ* are considered to be two distinct words, Li (2006) proposes that the idea of segregation by tone should be extended to other UFPs. That is, similar particles represented as one word in the written language should be seen as multiple words rather than one polyseme. Unfortunately, there is no further research supporting this idea, as far as we are concerned. As a consequence, we aim to examine how the particle *bā* with level tone fundamentally differs from its counterpart that has contour tone.

As a member of the class of modal particles (MPs), it is often suggested that the particles *bā* (also *bǎ*) are used for the purpose of reflecting a **weak commitment** towards the proposition (see Li, 2006). In general, there are argued to be three major ways in which the application of the particle signifies the speaker's commitment to have the lower degree of likelihood. Firstly, the particle serves to reflect speaker **uncertainty** (Chu, 2009; Chang, 2012; Deng, 2015). That is, when the speaker cannot be sure of what they say, the particle may be used as a linguistic marker to cast a doubt towards the proposition. Secondly, the speaker applies the particle to **make suggestions** that can be seen as a means to tell someone to do something in a polite fashion (Han, 2019; Zhang et al., 2018). Finally, the particle works on the illocutionary level to impose an interrogative force on the statement in order to **solicit agreement** from the audience (Chang, 2012; Li & Thompson, 1981; Ljungqvist, 2010; Tantucci, 2017). Note that the function of soliciting agreement is in general attributed to the particle *bǎ* with contour tone. We will therefore discuss this function more closely in **Section 5.4**, where we consider the discourse effects of *bǎ*. In this section, the first two features will be examined.

It is proposed that when the speaker does not have complete confidence in the proposition they assert, the particle *bā* can be applied to express the speaker's uncertainty. Consider the following dialogue, in which a couple of friends were talking about donating money to a charity:

(127) Zhāngsān: Wǒ juān yībǎi kuài.
1SG donate one-hundred dollar

Lǐsì: Zhè shì zuò hǎoshì, nǐ yīnggāi duō juān yīdiǎn.
this COP do good-deed 2SG should more donate little-bit

Zhāngsān: Nà wǒ juān liǎngbǎi kuài **bā**.
well 1SG donate two-hundred dollar PART

Zhangsan: I'll donate one hundred dollars.

Lisi: Donation is a good deed. You should donate a little more.

Zhangsan: Well, I'll donate two hundred dollars **bā**.

In example (127), it is suggested that after Zhangsan told Lisi that he would make some donation, Lisi encouraged him to raise the amount. Zhangsan then decided to donate a little bit more. Chu (2009) argues that the speaker deploys the particle to reflect a sense of uncertainty. That is, Zhangsan made such a decision with some hesitation, which can be seen as a 'willy-nilly agreement' in which the speaker has no confidence.

Taking other contexts into account, the degree of uncertainty appears to vary under different circumstances. Say, Zhangsan totally agrees with what Lisi suggests. The same utterance with the application of the particle may then indicate that the speaker is relatively less hesitant and that the sense of uncertainty can be reduced to some extent. In this case, the speaker may be happy to do a good deed with higher certainty. The degree of indeterminacy can be seen as a spectrum between weak and strong on a scale which is pragmatically conveyed.

A second meaning theorised to be licensed by the use of the particle is that the speaker is making a suggestion. Suppose that a mobile was ringing loudly. A person was then urged to pick it up. Consider the following example:

(128) Kuài jiē diànhuà **bā**.
quickly catch phone PART
'Hurry up and answer the phone **bā**.'

The speaker in (128) is proposed to make use of the particle to indicate that what is said should be regarded as a suggestion. As pointed out by Zhang and colleagues (2018), the particle in the example serves as an indicator of being polite as a negotiable strategy in the communication. That is, the speaker politely suggests that the listener should quickly answer the phone.

By examining more data in the literature, we note that most examples where the particle is proposed to be a suggestive marker can relate to **directive modality**. Directive modality is a subcategory of deontic modality that connotes how the world should be on the basis of the speaker's expectation of changing the world to become closer to an ideal. When sentences are directive, they may be seen as a suggestion even if there is no particle present. A question arises as to

whether the sense of suggestion comes from the particle as a necessary element or from the directive sentence.

To avoid mixing the suggestive meaning with the speech act performed by directives, non-directive sentences using the particle can be examined. This may be a better way for us to determine whether or not the sense of making a suggestion is the semantic property of the particle. Suppose that a couple of friends were discussing what to wear before they went out on the basis of their expectations about the weather conditions. A few hours later another conversation took place when they were back home. Consider the following example:

(129) Zhāngsān: Chuān ge wàitào zài chūmén, wàimiàn yǒudiǎn lěng.
wear CL jacket then leave-door outdoors a-bit cold

Lǐsì: Bùyòng lǎ, wǒ xiànzài hěn rè.
unnecessary PART 1SG now very hot

[*jǐge xiǎoshí guòhòu*]
a-few hour later

Lǐsì: Tóu hǎo tòng.
head so ache

Zhāngsān: Nǐ gǎnmàole **bā**.
2SG catch a cold-PFV PART

Zhangsan: Wear a jacket when you go out. It is cold outdoors.

Lisi: I do not think it is necessary. I feel a bit hot now.

[*a few hours later*]

Lisi: My head aches.

Zhangsan: You have caught a cold **bā**.

In example (129), Zhangsan warned Lisi to wear a jacket before they went out because he thought it was cold outdoors. Lisi, however, ignored the suggestion and went out without keeping himself warm enough. Later in the day when

they came back home, Zhangsan proposed that Lisi might have caught a cold after hearing from him that he had a headache. In this example, it appears not to make sense if we interpret the utterance with the particle applied as a suggestion that the listener would have brought the world closer to an ideal had they performed the action of catching a cold. Rather, the interpretation should be that the speaker supposes the proposition to be the case in terms of the degree of likelihood. In other words, the speaker is associating their **presumption** about the common cold with what has happened earlier but not issuing an invitation for the listener to take action.

Crosslinguistically, the presumptive use is not uncommon. There are studies such as in Hindi, Italian and Romanian languages looking at its epistemic interpretation (Ippolito & Farkas, 2019; Irimia, 2010; Montaut, 2004). As pointed out by Mihoc (2014), the notion of an uncertain event that is suspected by the speaker can be referred to as presumptive modality, which often involves the connotations of inference and doubt.

In general, the use of presumptive modality serves as a communicative strategy to signal that the propositional contents are the conclusion of the speaker's reasoning, which is on the basis of particular premises in the common ground that involve certain people (Ganea & Gata, 2008). The presumptive meaning is particularly encoded with inferences based on insufficient information (Fălăuş, 2014). It is worth noticing that there are arguments that presumptive modality can be seen as a type of epistemic modality, which carries the speaker's potential beliefs (see Sharma, 2008).

Looking at example (129) again, we can see that the presumptive meaning is exercised on the proposition that is indexed by the particle. Presumably, the statement ought to be true on the basis of what has happened previously. That is, Zhangsan presumes that Lisi's catching a cold should be the case because of some evidence that can be linked back to that Lisi did not wear a jacket as Zhangsan suggested. Note that the information the speaker makes use of is associated with the knowledge of (inter-)subjectivity that can be found in the common ground shared between interlocutors. We will come back to this in the next section.

Before moving on to our next discussion, recall the donation example and look at whether or not the presumptive meaning fits in the case in which the particle is used in the directive sentence. The example is repeated as follows:

(130) Zhāngsān: Wǒ juān yībǎi kuài.
1SG donate one-hundred dollar

Lǐsì: Zhè shì zuò hǎoshì, nǐ yīnggāi duō juān yīdiǎn.
this COP do good-deed 2SG should more donate little-bit

Zhāngsān: Nà wǒ juān liǎngbǎi kuài **bā**.
well 1SG donate two-hundred dollar PART

Zhangsan: I'll donate one hundred dollars.

Lisi: Donation is a good deed. You should donate a little more.

Zhangsan: Well, I'll donate two hundred dollars **bā**.

After Lisi's encouragement, Zhangsan decided to double the amount of money on his donation. The presumptive reading in (130) is then licensed by the use of particle as a means to indicate that the utterance marked by the particle is likely to be the case. The generalised interpretation can be read as Zhangsan presumes that his donating two hundred dollars should be done. That is, the speaker admits that they should donate more money, but it is uncertain as to whether or not they will actually do so.

On the basis of the empirical evidence, we suggest that the particle *bā* is used to impose a presumptive reading on the target proposition. By associating the presumption with certain information stored in the common ground, the speaker guides the listener in an implicit fashion that the proposition is likely to be true.

5.1.2 The source of knowledge

As was discussed in the preceding chapter, UFPs in Mandarin can be applied to signal a particular source of knowledge, referring to the source from which the speaker obtains information. Such information can be either subjective or

intersubjective. The former is a source of knowledge that reflects the speaker's personal experience. By contrast, the latter can be either shared between both parties of the conversation or be accessible to certain people in a community as encyclopaedic or common knowledge. This section examines what kinds of source of knowledge can underpin the use of the particle *bā* in the discourse.

Recall the headache example as discussed in the preceding section. At this point, we aim to concentrate on the exchange of information which happened before the particle is deployed. Consider under what conditions the use of the particle *bā* may be licensed:

(131) Zhāngsān: Chuān ge wàitào zài chūmén, wàimiàn yǒudiǎn lěng.
wear CL jacket then leave-door outdoors a-bit cold

Lǐsì: Bùyòng lǎ, wǒ xiànzài hěn rè.
unnecessary PART 1SG now very hot

[*jǐge xiǎoshí guòhòu*]
a-few hour later

Lǐsì: Tóu hǎo tòng.
head so ache

Zhāngsān: Nǐ gǎnmàole **bā**.
2SG catch a cold-PFV PART

Zhangsan: Wear a jacket when you go out. It is cold outdoors.

Lisi: I do not think it is necessary. I feel a bit hot now.

[*a few hours later*]

Lisi: My head aches.

Zhangsan: You have caught a cold **bā**

The speaker in (131) presumes that the listener is likely to accept the proposition indexed by the particle to be true and that both interlocutors should be familiar with the reason why the speaker says so. The application of the particle serves to associate the presumption about the proposition with an event that

has already happened. In other words, the speaker makes a presumption by reminding the listener of a piece of **intersubjective** knowledge that is stored in the common ground shared between the speaker and listener. To be more specific, by connecting these pieces of information together, Zhangsan tries to point out that Lisi's uncooperative behaviour can be related to the headache he is suffering and which may be a result of the common cold.

The intersubjective knowledge reflected by the particle *bā* may be encyclopaedic or common knowledge – that is to say, it may be shared by most people in the speech community, rather than just by the speaker and listener. Consider a previous example concerning making a donation to charity, repeated here:

(132) Zhāngsān: Wǒ juān yībǎi kuài.
1SG donate one-hundred dollar

Lǐsì: Zhè shì zuò hǎoshì, nǐ yīnggāi duō juān yīdiǎn.
this COP do good-deed 2SG should more donate little-bit

Zhāngsān: Nà wǒ juān liǎngbǎi kuài **bā**.
well 1SG donate two-hundred dollar PART

Zhangsan: I'll donate one hundred dollars.

Lisi: Donation is a good deed. You should donate a little more.

Zhangsan: Well, I'll donate two hundred dollars **bā**.

In example (132), the presumptive reading imposed on the utterance is licensed to associate the potentially true proposition with some information not only known to both the speaker and listener but also to others. A possible scenario can be that Zhangsan implicitly presumes that donating more money should be done because it can be universally true that helping others is a good thing to do on the basis of their generous culture. The speaker purposely points out this shared knowledge in the relevant sense, which serves as a reminder for the listener of what is said may be firmly supported by facts.

Finally, we would like to examine how intersubjectivity interacts with imperative sentences. Suppose that Zhangsan was urging their colleagues, Lisi

and Wangwu, to head for the restaurant half an hour before their reservation. Consider the following sentence:

(133) Wǒmen qù chīfàn **bā**.
1PL go eat-meal PART
'Let's go and eat **bā**.'

While the time of their dinner appointment was approaching, Zhangsan noticed that Lisi and Wangwu were sill busy with their work. Zhangsan then uttered the sentence with the particle used as in (133) in order to remind their colleagues that it was time they left. The imperative force is presumed to be performed on the basis of the intersubjective source of knowledge. Specifically, the information of the event they were supposed to participate in is accessible in the common ground shared between them. Therefore, we suggest that when the particle *bā* is deployed, the intersubjective knowledge can be retrieved to guide the listener to the speaker's particular point of view.

5.1.3 Restrictions on sentence types

The distribution of the particle *bā* appears to be more restricted than the particles *ā* and *ǎ* given that they can in principle be used in any type of sentence. In general, it is suggested that the particle with level tone denoting the sense of presumption only occurs in declarative and imperative sentences, and this particle is not found in interrogative and exclamative sentences (see Chang, 2012; Chu & Li, 2004; Deng, 2015; Lu, 2005). In other words, the particle in question is compatible with one's making a statement or issuing a command, but not compatible with one's asking a question or expressing strong emotion.

Even though the majority of studies in the literature argue that the particle *bā* is not compatible with interrogatives, some disagree with this conclusion. Li (2006) contends that the particle in question can be employed in both polar interrogatives and content interrogatives, as exemplified in (134) and (135) respectively.

(134) Hóngjiàn qū méi qù xuéxiào **bā**?
PN go NEG go school PART

'Did Hongjian go to school **bā**?'

(135) Nǐ zěnme xiū hǎo zhè liàng chēde **bā**?
2SG how repair good this CL car-STR PART
'How did you manage to repair this car **bā**?'

Li (2006) argues that the application of the particle makes both types of interrogatives function like an invitation along with an imperative reading. That is, the speaker requests the listener to provide an answer to the question. The sentence in (134) can be read as one in which the speaker forces the listener to answer whether the person in question goes to school. In (135), the speaker insists upon a response from the listener about how the car is repaired. Nonetheless, the imperative force licensed by the use of the particle *bā* is suggested by Li to be weaker than the force from a regular imperative by virtue of the fact that the particle conveys a weak strength of commitment showing speaker uncertainty.

The use of the particle *bā* in interrogatives is in fact rare. As far as we know, few data can be found to support this pattern, either in the Mandarin dialects of Taiwan or China. A couple of questions arise as to whether this special usage is confined to certain dialects or it is influenced by other Chinese languages as a result of language contact. Unfortunately, we cannot obtain a complete picture of this type of usage when there is insufficient information provided in the literature. In **Section 5.3.3**, we will discuss more details of the reason why the particles with presumptive readings are not compatible with interrogative sentences.

5.2 The effect of bā in discourse

As was discussed in the preceding chapter, some discourse effects such as softening the tone of the speaker and being sarcastic are not considered to be an inherent property taken from the particles *ā* and *ǎ*. Besides, others such as contrasting two discourse segments and functioning as a rhetorical device are derived from the context when the respective particles are in use.

It is proposed in the literature that the particle *bā* can be used to serve as

a discourse device indicating the speaker's dissatisfaction or sarcastic attitudes towards the proposition (see Lu, 2005). In this section, we aim to look at how these types of discourse effects are derived from the context when the particle is present.

5.2.1 Dissatisfied effects

The application of the particle *bā* is argued to generate a sense of **dissatisfaction** on the basis of comparison between its presence and absence in identical sentences (see Lu, 2005). To be more specific, when the particle is present, the speaker expresses a low degree of commitment towards the proposition, which can be seen as the particle bears a denotation or connotation of speaker uncertainty. In the meantime, the utterance with the particle applied may sound somewhat dissatisfied as a means to serve as a warning for the listener that what is required to be done is not done yet. On the other hand, without the particle, the reading of dissatisfaction would not be integrated with the utterance.

Suppose that a mother and son reached an agreement on a Saturday evening to do some shopping the next day in a market which opened from 1.30pm to 5.30pm at the weekend. On the Sunday afternoon, the mother found out that her son was still sleeping in. After several attempts at waking him up, she impatiently uttered a sentence with the particle *bā* attached to it. Consider the following example:

(136) Liǎngdiǎnle, qǐchuáng **bā**!
two-o'clock-PFV get-up PART
'It is already two o'clock. Don't you want to get up **bā**!'

In example (136), when it was getting late for the afternoon market, the mother made a few attempts to get the boy up. After seeing no signs of him getting out of bed, she lost her patience and requested him to get ready. The request is considered to be an implicit reminder of their agreement that the boy has access to in the common ground. Lu (2005) argues that the particle *bā* serves as a dissatisfaction marker in order to express that the speaker is unhappy with the

listener's uncooperative behaviour. This effect of dissatisfaction would not be evident when the particle is absent.

The dissatisfied reading, however, may not always be acceptable under different circumstances. For example, the mother can issue the request with a friendly attitude, which is not at all contradictory to the use of the particle *bā*. Even if the mother is in no rush to leave, and the utterance with the particle applied is considered to be felicitous. The effect of dissatisfaction is in fact not guaranteed when the particle is present. Rather, it can be considered to be a result of pragmatics that varies from context to context. The particle *bā* thus should not be held responsible for bring about the attitude of dissatisfaction that is reflected in the discourse.

5.2.2 Sarcastic effects

Another discourse effect of the particle *bā* discussed in the literature is conveying **sarcasm**. It is argued that the speaker can make use of the particle to hold a sarcastic attune towards the target proposition for either mocking or humorous purposes (Chu, 2009; Lu, 2005). In general, when language users do not believe the contents of their assertions, in the sense that they intend to ridicule their interlocutors, what they assert may sound sarcastic given that they hold an opposite point of view towards the proposition (see Garmendia, 2018). It is worth noticing that sarcasm should not be confused with irony. As pointed out by Partridge (1997), irony is a rhetorical device that typically signifies the opposite of the truth by the deliberate use of language for humorous or emphatic effects. On the other hand, sarcasm uses words to mock or convey contempt for humorous purposes. Although sarcasm may contain ambivalence, it is not necessarily ironic.

Let us turn back to our discussion on the sarcastic use when the particle *bā* is present. Suppose that a repair technician confidently claimed that the laptop infected with a computer virus could be easily fixed within a few minutes. Nonetheless, it ended up that all the files in the affected device were completely deleted through the trojan malware made by the hacker. Consider the following

example that one of the colleagues utters:

(137) Nǐ kàn nǐ, chuīniú chuī dàle **bā**!
2SG see 2SG brag blow big-PFV PART
'Look at you! What a brag you made **bā**!'

As pointed out by Chu (2009), the utterance with the particle *bā* used in (137) is suggested to express a sense of 'Don't you see what you did' as a means of friendly sarcasm, which is considered to be relevant to the notion of speaker uncertainty. That is, the speaker makes use of the particle to mock the listener who boasts about their ability of fixing the problem of the malware.

Having examined the data thoroughly, we can see that the sarcastic effect appears not to cover all the uses when the particle is in use. It is not necessary in all the situations that the speaker would utter a sentence with the particle in order to ridicule their interlocutors. Rather, it is also acceptable that the utterance discussed above can be seen as a friendly warning. For instance, after pointing out the fact of their colleague's bragging, the speaker could be understood as encouraging the listener to be more realistic next time. In this case, a warm gesture rather than sarcasm may be interpreted from the context. As a consequence, the sarcastic interpretation imposed on the utterance appears to be a result of pragmatics from context to context.

Based on our analysis, we can see that the interpretation of sarcasm appears to be largely context-dependent. Under most circumstances, the particle is not obligatorily present given that context may be held responsible for conveying the speaker's particular attitudes.

5.3 Particle bǎ

As was discussed in the preceding section, the particle *bǎ* should be treated as a different toneme from the particle *bā* rather than the realisation of allotony as a result of tone sandhi (see Li, 1999). The former is of contour tone with a slight fall that shifts from the middle pitch level. On the other hand, the latter is of level tone at high pitch. Their tone differences are in fact not triggered by their

neighbouring words but are intrinsic properties of the lexical items.

This section discusses the modal and discourse properties of the particle *bǎ*. By looking at its interpretation and use in broad contexts, we aim to characterise how the particle in question differs from its counterpart that is of level tone with high pitch despite the fact that they are represented in an identical logogram in the written language.

5.3.1 The fundamental modal property

We can see from a good example from Chang (2012) that was mentioned in **Chapter 2**, showing that the UFPs *bā* and *bǎ* should be seen as different linguistic items rather than as a polyseme. However, Chang and most researchers in the literature appear to have neglected this essential fact in their analysis. Let us look at this example again in which a sales assistant was arguing with a customer over the outfit they were trying on. It seemed that the sales assistant had a different point of view from the customer. Consider the following dialogue:

(138) Gùkè: Wǒ juédé zhè jiàn qúnzi duì wǒ bù shìhé.
1SG think this item skirt to 1SG NEG suit

Diànyuán: Wǒ bìng bù tóngyì,
1SG actually NEG agree

* nǐ yīnggāi chuānchuān kàn **bā**.
2SG should wear-wear see PART

Customer: I don't think this skirt suits me.

Sales Assistant: I disagree. * I think you should try it on **bā**.

Chang proposes that the utterance with the particle used in (138) is infelicitous given the fact that it may be contradictory to collocate the particle *bā* with linguistic items denoting the sense of uncertainty, such as *should* in the example, in imperative and declarative sentences. It is worth noticing that the utterance is acceptable when the particle is omitted.

After taking pitch heights into account for the above example, we note that the particle with a slight fall at its pitch level appears to function properly. Consider the following example where the particle *bā* with level tone is substituted with the particle *bǎ* with contour tone:

(139) Wǒ bìng bù tóngyì, nǐ yīnggāi chuānchuān kàn **bǎ**.
1SG actually NEG agree 2SG should wear-wear see PART
'I disagree. I think you should try it on **bǎ**.'

In example (139), the application of the particle with contour does not have an impact on the felicity of the utterance. When the particle *bǎ* is present, the utterance is perfectly acceptable. This phenomenon suggests that the particles *bā* and *bǎ* may be fundamentally different linguistic items. Clearly, Chang ignores that there are other possibilities for the use of the particle with contour tone. It seems that her treatment cannot account for the reason why the particle with contour tone is acceptable in this particular utterance while the particle with level tone is not.

By looking at its meaning imposed on the utterance, we may be able to address the reason why the use of the particle with contour tone is considered to be acceptable while its counterpart is not. Reconsider the above example with regard to persuading the customer, and let us focus on the modal interpretation reflected by the particle *bǎ*. Consider the following example where the particle *bā* is replaced with *bǎ*:

(140) Gùkè: Wǒ juédé zhè jiàn qúnzi duì wǒ bù shìhé.
1SG think this item skirt to 1SG NEG suit

Diànyuán: Wǒ bìng bù tóngyì, nǐ yīnggāi chuānchuān kàn **bǎ**.
1SG actually NEG agree 2SG should wear-wear see PART

Customer: I don't think this skirt suits me.

Sales Assistant: I disagree. I think you should try it on **bǎ**.

After the customer voices their opinion of the clothes, the sales assistant tries to disagree with it by uttering the sentence as in (140) with the particle *bǎ* used.

With the application of the particle, the speaker implicitly makes a **presumption** to specify that the proposition should be the case in a possible world, and the presumption is made on the basis of some given information in the discourse. The utterance can be interpreted as conveying that, on the basis of personal presumptions, the speaker suggests the request to be the case for the purpose of persuading the listener to try on the skirt. By contrast, with no application of the particle, the speaker literally tells the listener to try on the clothes without adding enriched information to it. In particular, how the speaker makes such a judgement is unsaid. On the other hand, the use of the particle *bǎ* is to point out that the proposition is likely to be true or the request is likely to be obeyed based on their personal presumptions.

Consider another example where a couple of postgraduate students were studying in the library on a gloomy night. After Lisi got distracted from his study, Zhangsan noticed that he was looking out the window. The conversation then took place as follows:

(141) Zhāngsān: Nǐ zài kàn shénme?
2SG PROG look what

Lǐsì: Nǐ kàn, kuài xiàyǔle **bǎ**.
2SG look soon fall-rain-INCH PART

Zhangsan: What are you looking at?

Lisi: Look! I think it is going to rain **bǎ**.

In example (141), Lisi applies the particle *bǎ* to the utterance in response to Zhangsan's query. The particle is used to implicitly associate the background information the speaker relies on with the proposition they make. In other words, the speaker supposes the proposition likely to be true on the basis of an underlying presumption. In general, the particle serves as a linguistic device to point out that what the speaker says is presumed to be true on the basis of certain knowledge shared between particular people. We will discuss in more detail in the next section what kinds of knowledge the speaker can count on that would license the presumptive use of the particle.

On the basis of our observations mentioned above, we suggest that both the particle *bǎ* with contour tone and its counterpart with level tone can both be attached to an utterance for the purpose of signalling a presumption towards the proposition. An essential question arises as to why these two particles should be seen as different linguistic items when they convey the same modal meaning, and how we characterise the difference between them. Recall our observation in the preceding chapter that by analogy with the case of German particles *ja* and *doch* and the particles *ā* and *ǎ* in Mandarin, an overlap of modal properties between similar particles is not uncommon. The former pair encodes a sense of familiarity towards the proposition, and the latter a sense of unexpectedness.

As was discussed in the preceding chapter, the source of knowledge from which the speaker obtains plays an important role in distinguishing the particles *ā* and *ǎ*. In the following section, we aim to look at whether or not this is also a determining factor for the difference between the particles *bā* and *bǎ*. A detailed discussion is offered as follows with regard to how the speaker manages particular information that is stored in the common ground after the particle *bǎ* is present.

5.3.2 The source of knowledge

Having specified the fundamental modal property of the particle *bǎ*, we now turn to examine the enriched meaning conveyed by the particle at a broader discourse level. Our aim is to look at how speakers use the particle *bǎ* when they communicate with their interlocutors. In general, we will argue that the particle is employed as a means to achieve particular communicative goals via the organisation of common ground.

By virtue of the fact that both particles *ā* and *bā* with level tone are associated with the source of knowledge that is considered to be intersubjective information, it should be safe for us to predict that the association of tones and (inter)subjectivity may be an analogous relationship although it is not necessary so. In this section, we explore the idea that the particle *bǎ* with contour tone is used to encode the sense of subjectivity rather than intersubjectivity.

Consider a previous example as discussed in the preceding chapter where

a couple of friends were chatting. During the conversation, Zhangsan told Lisi that he saw Wangwu shopping in a supermarket located in Taipei the other night. However, Lisi disagreed with Zhangsan. In this case, an utterance is made, as a reply, with the particle *bǎ* attached for the purpose of achieving a particular communicative goal.

(142) Zhāngsān: Wǒ zuótiān wǎnshàng qù Quánlián mǎi dōngxī deshíhòu,
1SG yesterday night go PN buy stuff STR-time

kàndào Wángwǔ zài nàlǐ .
see-reach PN exist there

Lǐsì: Tā bù zài Táiběi **bǎ**.
3SG NEG exist PN PART

Zhangsan: When I was buying stuff in PX Mart last night, I saw Wangwu was there.

Lisi: He is not in Taipei **bǎ**.

In example (142), Lisi applies the particle to reflect that what he says is on the basis of his personal experience. That is, the source of knowledge from which he refers is subjective. The speaker is considered to be the only person who is responsible for the truth. A possible scenario can be that Lisi knows where Wangwu is because Wangwu told him on the phone. However, Lisi does not know whether Zhangsan knows about this or not. The application of the particle is to reflect that the indexed proposition is from the speaker's own knowledge based on some evidence or certain facts.

Recall the headache example that was discussed in **Section 5.1.2** concerning intersubjective knowledge as follows:

(143) Zhāngsān: Chuān ge wàitào zài chūmén, wàimiàn yǒudiǎn lěng.
wear CL jacket then leave-door outdoors a-bit cold

Lǐsì: Bùyòng lǎ, wǒ xiànzài hěn rè.
unnecessary PART 1SG now very hot

[*jǐge xiǎoshí guòhòu*]
a-few hour later

Lǐsì: Tóu hǎo tòng.
head so ache

Zhāngsān: Nǐ gǎnmàole **bā**.
2SG catch a cold-PFV PART

Zhangsan: Wear a jacket when you go out. It is cold outdoors.

Lisi: I do not think it is necessary. I feel a bit hot now.

[*a few hours later*]

Lisi: My head aches.

Zhangsan: You have caught a cold **bā**.

In example (143), the speaker implicitly indicates that the listener is likely to accept the proposition marked by the particle to be true. A presumption is made by the speaker to associate the proposition with the intersubjective knowledge. In other words, the speaker presumes the proposition to be true on the basis of the intersubjective knowledge shared between the speaker and listener. When we replace the particle *bā* with *bǎ*, it can be seen that the source from which the listener obtains the information is different. Clearly, the intersubjective knowledge licensed by the particle with level tone is not compatible with the particle with contour tone.

Now, let us concentrate on how the source of knowledge is reflected in the discourse when the *bǎ* is replaced with the use of the particle *bā* in the same conversation. Consider:

(144) Nǐ gǎnmàole **bǎ**.
2SG catch a cold-PFV PART
'You have caught a cold **bǎ**.'

Similar to the above example, the speaker in (144) suggests in an implicit fashion that the listener should accept the truth of the indexed proposition, which is based on a presumption made by the speaker. However, the enriched meaning in this case does not serve to remind the listener of a piece of information that is known to both the speaker and listener. That is, the speaker does not attempt to point

out that the listener's uncooperative behaviour may have led to the headache which could be a result of the common cold. Instead, the speaker connects the headache to the common cold by informing the listener that such a presumption is on the basis of the speaker's personal experience. In other words, the proposition modified by the particle is presented with an enriched meaning which shows the speaker alone holds the responsibility for its truth. At this point, the source of knowledge is **subjective** rather than intersubjective.

Overall, these examples support the claim that the particle *bǎ* is used to reflect that the speaker makes a presumption on the basis of their subjective knowledge, which serves as a determining factor of pointing out the difference from the particle *bā*. What is more, it can be seen that the particles *ā* and *bā* both with level tone are used to indicate the source of intersubjective knowledge. On the other hand, the particles *ǎ* and *bǎ* both with contour tone concern the information that is considered to be subjective.

5.3.3 Restrictions on sentence types

As was discussed in **Section 5.1.3**, the presumptive use licensed by the particle *bā* with level tone is generally not compatible with asking a question as in interrogatives or expressing strong emotion as in exclamatives. Does this also apply for the particle *bǎ* with contour tone? To be more specific, this section examines whether or not the distribution of the particle *bǎ* is confined to declarative and imperative sentences, and whether its semantic features have an impact on the infelicity when it is applied to interrogative and exclamative sentences.

When the particle *bǎ* is applied, a proposition marked by the particle is introduced into the discourse with a weaker commitment towards what the speaker says. In general, the speaker commitment reflected by the particle conveys varying degrees of strength towards the proposition that is likely to be true in a possible world. By contrast, interrogative sentences are used to pose a question for the purpose of getting a good answer to it (see Aikhenvald, 2014; Dekker et al., 2016; Saeed, 2016). Hence, interrogatives are typically used in cases

in which the speaker is not presently able to commit themselves to the truth of the proposition. As a consequence, we might expect that modal items pertaining to the presumptive mood do not usually appear in sentences with interrogative force by virtue of the fact that their features appear to clash with one another. The following examples show that the use of *probably* in English as in (145) and *kěnéng* [probably] in Mandarin as in (146) tend to be infelicitous as these linguistic items conveying presumptive elements do not fit with the information-seeking questions.

(145) # Who is **probably** in London?

(146) # Shéi **kěnéng** zài Lúndūn?
who probably exist PN
'Who is **probably** in London?'

It is important to note that it is not definitely impossible for the linguistic items with presumptive elements to be used in interrogative sentences. One possible scenario can be that when the presumption is compatible with the speaker ignorance that is arguably implicated by asking a question, the use of presumptive words is then acceptable. Suppose Harry was sharing some information, but Tom did not catch some parts of the information clearly. Consider the following example:

(147) Harry: John is **probably** in London.
Tom: Who is **probably** in London?

In example (147), after missing out who the person is probably in London, Tom raised a question on the basis of what Harry said. Clearly, the modal adverb *probably* does not scope over the copula nor the whole proposition. Instead, it remains lower in the predicate. This is the case for Mandarin, too. Consider example (148) as follows:

(148) Hālì: Yuēhàn **kěnéng** zài Lúndūn.
PN probably exist PN

Tāngmǔ: Shéi **kěnéng** zài Lúndūn?
who probably exist PN

Harry: John is **probably** in London.

Tom: Who is **probably** in London?

It can be seen that as long as the presumptive force reflected by the modal items do not compete or clash with the interrogative force licensed by the questions, the seemingly contradictory features are able to co-occur in the same sentence. To be more specific, echo questions like this are qualitative, so scopal elements in the quoted part can scope over the whole proposition. In fact, one force is in fact positioned higher at the sentence level than the other, which makes their use acceptable.

A question arises as to how come the particle *bǎ* cannot be found in interrogative sentences given that it has presumptive characteristics that are compatible with questions under certain circumstances. Consider the following example:

(149) Hālì: Yuēhàn zài Lúndūn **bǎ**.
PN exist PN PART

Tāngmǔ: # Shéi zài Lúndūn **bǎ**?
who probably exist PN

Harry: John is in London **bǎ**.

Tom: # Who is in London **bǎ**?

In this case, the speaker ignorance does not help the utterance to be used felicitously. Looking into example (149) carefully, we note that the scope of the particle *bǎ* differs from that of the modal adverbs *probably* in English and *kěnéng* in Mandarin we have mentioned above. As was pointed out in **Chapter 2**, UFPs are regarded as heads of complement phrases that project functional phrases, which take the whole scope of the sentence (see Simpson, 2014). This is also the case for modal particles (MPs) in German that occur in the middle field of the utterance (see Döring & Repp, 2019). It is clear that the presumptive mood reflected by the particle *bǎ* and the interrogative mood licensed by the question are competing with one another and clash, resulting in infelicity.

It is worth bearing in mind that we are not claiming either UFPs or MPs to be in general excluded in interrogative sentences. Rather, we suggest that those particles which convey presumptive mood are unable to co-occur with interrogatives, due to the clash of semantic features discussed above.

5.4 The effects of bă in discourse

This section discusses the effects of the particle *bǎ* in the discourse. In the literature, the particle in question is suggested to work on the illocutionary level for the purpose of imposing an interrogative force on the proposition as a means to solicit agreement from interlocutors (see Chang, 2012; Ljungqvist, 2010; Tantucci, 2017). In **Section 5.4.1** we consider whether or not the particle serves as a rhetorical device that seek a particular answer. In **Section 5.4.2**, we examine whether or not this particle can be applied to out of the blue situations.

5.4.1 The particle bă as a rhetorical device

As pointed out by Ljungqvist (2010), the particle *bǎ* is used to indicate a weaker commitment towards what is said by the speaker. Meanwhile, the particle has an impact on the sentence it attaches. That is, it serves as a question marker, just as the particle *mā* does, to obligatorily cause declarative sentences to turn into interrogative sentences. In general, the particle *mā* is a grammatical device that is used to form interrogative sentences. The speaker makes use of this type of particle to signal out an uncertain attitude towards the truth of the proposition. Consider the following example:

(150) Tā shì xuéshēng **bǎ** ?
3SG COP student PART
'He is a student **bǎ** , [I guess?]'

If the particle *bǎ* could be applied to change the declarative sentence into an interrogative sentence as it is claimed, a question arises as to whether or not a similar effect is observed when the particle is used in imperative sentences. Consider the following example:

(151) Zánmen huí jiā **bǎ** .
1PL return home PART
'Let's go home **bǎ** , [shall we?]'

On the basis of Ljungqvist's analysis, it can be seen that the sentence with imperative sentence in (151) with the particle in question used is still an imperative sentence. In her research, only the declarative is considered to be turned into an interrogative sentence. However, we note that it is not necessary for (150) to function like an interrogative sentence with the goal of requesting neutral information as a regular question. This is a similar case to what we have discussed for the particle *ǎ* in the preceding chapter.

Similar to the particle *ǎ* , the particle *bǎ* is used to make a point for the purpose of guiding the listener towards a topic from a particular point of view. In this respect, the particle functions as a **rhetorical device**, which differs from a regular interrogative particle such as the particle *mā* in Mandarin that is used to ask a general question. In general, the use of the particle *bǎ* is considered to seek agreement from a particular point of view (Tantucci, 2017; Zhang et al., 2018).

Returning to examples (150) and (151), we can see from Ljungqvist's interpretation that both utterances, the former comprising the declarative clause and the later the imperative clause, are followed by an interrogative fragment. This type of question performs a speech act constituting to an assertion or command paired with an enriched reading of requesting confirmation. These check-questions 'I guess he's a student?' as in (150) and 'shall we?' as in (151) are in fact considered to be rhetorical.

As a consequence, the particle *bǎ* appears not to be used to change the nature of the sentence type but to bring out a rhetorical sense as a means to request certain information from a particular point of view no matter whether it is deployed in either declaratives or imperatives.

5.4.2 Restrictions of use in out of the blue situations

The application of UFPs can be an efficient way to coherently associate a current proposition with a past event. For participants in the discourse, these types of modal items serve as linguistic cues that guide the listener to what is being said in the past from a particular point of view. The purpose of them is not to introduce new information as a means to shape the common ground. Instead, old information, at least given to the speaker, is retrieved to bring up a point as a reminder. It is seen as a retrospective fashion to relate the current proposition to the information stored in the common ground (Karagjosova, 2004; Repp, 2013). Therefore, UFPs are expected not to take place in an **out of the blue situation**. In general, utterances with particles attached are argued to be restricted to **non-discourse-initial** contexts (Haselow, 2012), meaning that they obligatorily make reference to prior discourse content (see Brown & Yule, 1983; Schiffrin et al., 2001; Wang et al., 2010). Note that the general tendency for not being used in a non-initial position within a discourse applies to the particles in the middle field as well (Döring, 2016; Kwon, 2005; Zimmermann, 2009).

Nonetheless, a number of uses can be found in the data that utterances with the particle *bǎ* (and also other UFPs) deployed are **discourse-initial**, meaning that they are positioned as the first unit at the beginning of the discourse (see Brown & Yule, 1983; Schiffrin et al., 2001; Wang et al., 2010). Note that discourse-initial utterances are often regarded as an icebreaker when a conversation takes place. A question, therefore, arises as to how the retrospective reading that is reflected by the particle can be interpreted when there is no prior segment in the ongoing discourse. Consider the following example where a couple of friends were in the library revising for their final exams:

(152) Zhāngsān: Nǐ kàn, kuài xiàyǔle **bǎ**.
2SG look soon fall-rain-INCH PART

Lǐsì: Zhēnde jiǎde!
true false

Zhangsan: Look! I think it is going to rain **bǎ**.

Lisi: No way!

During their revision in the library, Zhangsan noticed that it was likely to rain outdoors in no time. He then informed Lisi about it. What Zhangsan says can be regarded as an answer to some question that is implicitly under discussion in the discourse. The particle *bǎ* in (152) is used to indicate a presumption in favour of the proposition being true. Meanwhile, the presumptive use is attributed to the source of subjective knowledge. That is, Zhangsan presumes the proposition to be true on the basis of his personal experience.

The issue we are dealing with here is what the indexed proposition is associated with when there is no prior segment offered in the discourse. Nonetheless, taking the physical context into consideration, we can see that the sentence is not uttered out of the blue. The utterance is in fact used to describe a possible outcome of the weather. As a consequence, the physical context can be seen as a discourse unit that the speaker can make use of. Technically, the particle *bǎ* in the above example is not used in an out of the blue situation.

Even thought both parties of interlocutors are not physically present in the same place, the particle can still be used in a discourse-initial position with no physical context the listener can be making use of. Consider the following example where both conversation participants are in different rooms in a flat:

(153) Zhāngsān: Bīngxiāng niúnǎi hái méi hē wán **bǎ**,
fridge milk still NEG drink finish PART

jīntiān xiàwǔ wǒ yào qù mǎi cài.
today afternoon 1SG want go buy vegetable

Lǐsì: Hái méi ō.
still NEG PART

Zhangsan: We've not finished the milk in the fridge, have we **bǎ**?

I am doing grocery shopping this afternoon.

Lisi: Not yet ō.

In example (153), Zhangsan was making a list for the grocery shopping he was going to do in the afternoon. He knew that Lisi was somewhere in the flat so he raised his voice to ask him a question loudly. A possible scenario for this case can be that Zhangsan presumes the proposition is likely to be true because there was plenty of milk left when he opens the fridge early in the morning. What Zhangsan refers to is on the basis of his subjective knowledge. Based on the use of the particle, Lisi can obtain the subjective reading of Zhangsan's intention on top of the proposition being made explicitly. Even though they are not physically present in the same place, the utterance with the particle applied can still be associated with some information in the broad discourse.

Crosslinguistic evidence has also provided us solid evidence that it is not uncommon for such particles to occur in initial utterance in the discourse. For example, Döring (2016) points out that the particle *doch* in German can be applied in a situation where the context can be accommodated by the listener. Consider the following example:

(154) Sie sind **doch** Paul Meier.
2SG COP PART PN
'You must be [**doch**] Paul Meier.'

It is suggested the above sentence to be used, with no prior interaction takes place, right after a person is spotted by someone. Under this circumstance, the discourse-initial use of the particle *doch* is then acceptable.

5.5 Modal combinations of bā and bǎ and their quantificational force

This section looks at combinations of the particle *bā* and *bǎ* with other modal items belonging to different categories in Mandarin. In addition, a discussion of their quantificational force will be offered.

With the application of an evolutionary approach to semasiological[31] change, Tantucci (2017) examines the collexemes, the habitually co-occurring

[31] Semasiology is a discipline of linguistics dealing with words and the concepts they represent.

lexical units, of the particle *bǎ*. Based on the CCL Corpus[32] starting from Great Qing (1644–1911 CE) to present-day usage (until the 2010s), it is proposed that modal verbs such as *gāi* [should], *huì* [may], *néng* [can] and modal adverbs such as *dàgài* [probably] and *shàngxià* [more or less] are frequently collocated with the particle *bǎ*. These linguistic items can be used to demonstrate a weaker degree of likelihood towards the truth of the proposition from a subjective point of view. That is to say, the speaker somewhat expresses the sense of indetermination or uncertainty when using these types of words. Consider the following selected examples:

(155) Bān Gù suǒwèi yìxiàng, **dàgài** shuōde shì qián
PN so-called pictorial-meaning probably talk-STR FOC previous
yī lèide huìyìzì **bǎ**.
one type-STR ideogram PART
'The so-called pictorial meaning by Ban Gu is **probably** the ideograms we have mentioned previously **bǎ**.'

(156) Shèng yé wéntīng yī xiào, suì shuōdao: 'Cǐ rén èrshí
PN master hear one laugh then say this person 20
shàngxià suì **bǎ**.
more-or-less old PART
'Master Sheng heard something and laughed. He then said: "I think this person is **more or less** 20 years old **bǎ**."'

In Tantucci's study, it can be seen that modal words with the sense of indetermination are not the only linguistic items that can be collocated with the particles with contour tone. There are also words or phrases such as *kěndìng* [must] and *háowúyíwèn* [without a doubt] denoting the sense of determination or certainty that are found to be used in an utterance together with the particle. Consider the following selected examples:

(157) Zhè zhǒng shìqíng bù yìnggāi fāshēng zài zhèlǐ, wǒ xiǎng **kěndìng**
this kind thing NEG should happen exist here 1SG think must
shì dírénde yīnmóu **bǎ**.
COP enemy-STR plot PART

[32]The CCL Corpus was established by the Center for Chinese Linguistics at Peking University and contains up to 700 million words.

'This kind of thing should not be happening here. I think it **must** be the enemy's plot **bǎ**.'

(158) **Háowúyíwèn** nín shì chóngshěnpài **bǎ**, yīnwèi wàiguórén
without-a-doubt 2FORM COP revisionist PART because foreigner
dōu shì chóngshěnpài.
all COP revisionist
'**Without a doubt**, you must be a revisionist **bǎ**, because all the foreigners are revisionists.'

In line with Tantucci's (2017) research, we can see from the study of Chang (2012) that both notions of certainty and uncertainty reflected by modal verbs and adverbs can be encoded into utterances when the particle *bǎ* is present. Examining the data on the basis of the Sinica Corpus[33], Chang presents a number of modal items which are often collocated with the particle in question. **Table 5.1** shows a selection of frequent collocations of the particle with contour tone and its collexemes that denote both senses of uncertainty and certainty. The numbers represented in the table indicate the ranks of their frequency, the smaller numbers corresponding to higher ranks.

Table 5.1: Frequent collocations of bǎ and its collexemes

Semantic type	Collexeme frequency	
uncertainty	(1) dàgài [probably]	(3) yěxǔ [maybe]
	(4) huòxǔ [perhaps]	(5) yīnggāi [should]
	(6) gāi [likely]	(8) suànshì [could be]
	(10) kěnéng [may]	(14) kǒngpà [I am afraid]
	(25) xiǎng [I think]	(28) wèimiǎn [rather]
	(29) dàyuē [about]	(30) hǎoxiàng [seem]
certainty	(9) tài [too mcuh]	(16) yīdìng [must]

Consider the following selected examples where (159) exemplifies the use of an uncertain modal and (160) the use of a certain modal:

(159) Zhè **suànshì** yǔyánde zhàngài yǐnqǐde wùjiě **bǎ**!
this could-be language-STR barrier cause-STR misunderstand PART

[33]Sinica Corpus stands for Academia Sinica Balanced Corpus of Mandarin Chinese, which is a corpus of contemporary Mandarin with approximately 10 million words.

'This **could be** a misunderstanding caused by the language barrier **bǎ**!'

(160) Yīwèi gēmí shuō: 'Tiāntáng lǐ **yīdìng** yě yǒu hěnduō tāde
one-CL fan say heaven inside must also EXT many 3SG-STR
gēmí **bǎ**!'
fan PART
'One fan says: "There **must** be a lot of her fans in heaven too **bǎ**!"'

On the basis of the observed data from the above mentioned quantitative studies, we can see that the degree of likelihood towards a proposition varies according to the circumstances in which the particle is present. Recall that we have suggested based on the research of Kratzer (2012) and others in the preceding chapter that the quantificational force for UFPs lies between 0 and 1 with respect to the degree of likelihood, where 0 denotes impossibility and 1 certainty. By virtue of the fact that the expected certainty flows in accordance with the particular situations where the particle is used, we suggest the quantificational force of the particle *bǎ* can be considered to be varied on the scale between weak and strong accordingly.

It is worth noticing that the particle *bā* is rarely to be found in the literature to be collocated with modal verbs or adverbs that denote the concept with regard to either certainty or uncertainty. Nonetheless, we can see based on the data that both certain and uncertain modal items can be collocated with the particle with level tone. Therefore, we suggest that the quantificational force of the particle *bā* also varies from context to context as it does for the particle *bǎ*. Consider the following examples where (161) includes a certain modal and (162) includes an uncertain modal:

(161) Nǐ **yīdìng** shì gǎnmàole **bā**.
2SG must COP catch a cold-PFV PART
'It must be that you catch a cold **bā**.'

(162) Nǐ **kěnéng** gǎnmàole **bā**.
2SG may catch a cold-PFV PART
'You may catch a cold **bā**.'

At this point, given their semantic nature, the modal strength of the particles *bā* and *bǎ* appear to be weaker than that of the particles *ā* and *ǎ*. As

consequence, we suppose the modal force of these presumptive particles can be seen as a member of the possibility group rather than the necessity group in which the particles *ā* and *ǎ* are classified.

5.6 Discourse relations signalled by bā and bǎ

As was discussed in the preceding chapter, discourse relations offer us a picture of how the discourse is organised when UFPs are present, which indicates what is intended beyond the literal meaning at the sentence level. It is worth bearing in mind that discourse relations that are signalled by these particles are not necessarily confined to their local context. Comprehenders can make use of common ground or real world knowledge to reconstruct these implicit relations in the discourse if required. In this section, we provide a discussion on what discourse relations can be reflected by the particles *bā* and *bǎ*.

Recall the example with regard to the implication that the speaker has caught the common cold. The use of the particles *bā* and *bǎ* is compared under the same context as follows. Consider what discourse relations can be licensed by the particle with level tone as in (163) and by the particle with contour tone in (164):

(163) Zhāngsān: Chuān ge wàitào zài chūmén, wàimiàn yǒudiǎn lěng.
wear CL jacket then leave-door outdoors a-bit cold

Lǐsì: Bùyòng lǎ, wǒ xiànzài hěn rè.
unnecessary PART 1SG now very hot

[*jǐge xiǎoshí guòhòu*]
a-few hour later

Lǐsì: Tóu hǎo tòng.
head so ache

Zhāngsān: Nǐ gǎnmàole **bā**.
2SG catch a cold-PFV PART

Zhangsan: Wear a jacket when you go out. It is cold outdoors.

Lisi: I do not think it is necessary. I feel a bit hot now.

[*a few hours later*]

Lisi: My head aches.

Zhangsan: You have caught a cold **bā**.

(164) Nǐ gǎnmàole **bǎ**.
2SG catch-a-cold-PFV PART
'You have caught a cold **bǎ**.'

We can see from examples (163) and (164) that a discourse relation of **Explanation** is assigned to both utterances when the particles *bā* and *bǎ* are applied. That is, what Zhangsan says serves to explain what Lisi is intended to express. It is important to note that the discourse relation of Explanation is not signalled by the particles *bā* and *bǎ* between the content of Zhangsan's utterance and the Lisi's utterance. Rather, the particle is applied to point to a deeper cause that Lisi not wearing a coat earlier, as a factor explaining the statements made both by Zhangsan and Lisi. Furthermore, after taking the source of knowledge into account, it can be seen that the particle with level tone can serve as a reminder device to retrieve the intersubjective knowledge stored in the common ground. A relation of **Contrast** is then formed between discourse units in order to point out that the speaker and listener are on the different page. On the other hand, the subjective knowledge licensed by the particle with contour tone does not necessarily generate such a contradictory concept that can be traced back to the common ground. It appears that the speaker is responsible for the judgement towards the proposition on the basis of their personal experience.

On top of Explanation, both UFPs in question can also be applied to license a discourse relation of **Elaboration**, which in general offers a more detailed description of the same state of affairs. Recall the raining example and consider the discourse relation reflected by the particles with level tone and with contour tone:

(165) Zhāngsān: Nǐ zài kàn shénme?
2SG PROG look what

Lǐsì: Nǐ kàn, kuài xiàyǔle **bā**.
2SG look soon fall-rain-INCH PART

Zhangsan: What are you looking at?

Lisi: Look! I think it is going to rain **bā**.

(166) Nǐ kàn, kuài xiàyǔle **bǎ**.
2SG look soon fall-rain-INCH PART
'Look! I think it is going to rain **bǎ**.'

In both examples listed above, what Lisi says serves to elaborate the condition of the weather in more detail. What is more, the intersubjective knowledge reflected by the particle in (165) guides the listener to retrieve some contradictory information stored in the common ground between both parties of the conversation, which forms a relation of Contrast in the discourse. Despite the fact that the particle with contour tone does not operate on the common ground to contrast ideas, it can directly contrast two neighbouring discourse units. Say, one does not think it is going to rain, but the other does. Example (166) can then be considered to provide an interpretation of Contrast, showing the relation between two discourse units are contradictory with one another.

As discussed in **Section 4.6**, when UFPs are absent, the coherence relations that are licensed by the use of these particles may not be available. Consider the following examples:

(167) Zhāngsān: Wángwǔ bǎ cǎoméi chī wánle.
PN dispose strawberry eat finish-PFV

Lǐsì: Xiàyǔle.
fall-rain-INCH

Zhangsan: Wangwu has eaten up the strawberries.

Lisi: It has started raining.

(168) Xiàyǔle **bǎ**.
fall-rain-INCH PART
'[That is because] it has started raining **bǎ**.'

In example (167), reconstructing the discourse relation of what Zhangsan and Lisi said can be difficult. The precipitation seems to bear no logical relation with one's having finished the strawberries. What relations should be reconstructed may remain unclear when no additional information is provided. On the other hand, the use of the particle *bǎ*, as in example (168), signals a discourse relation of Explanation. That is, what Lisi said is seen as a deeper cause explaining why Wangwu has eaten up the strawberries. By applying the particle, Lisi explicitly reminds Zhangsan of the subjective information and points out the causal relation. Therefore, the particular discourse relation can be readily reconstructed by comprehenders when the particle is present.

Having observed the data, we suggest that both UFPs *bā* and *bǎ* can be applied accordingly to select Explanation, Elaboration and Contrast. What is more, how discourse relations are signalled by these particles is not mandatorily restricted to their local context. When it is necessary, comprehenders can rely on common ground or real world knowledge to reconstruct implicit relations the speaker intends to make.

5.7 Chapter summary

We began this chapter by looking at the fundamental modal properties of the particles **bā** with level tone and **bǎ** with contour tone. According to their use, we suggest that **presumption** is the modal flavour for both particles. Examples are offered to illustrate how the sense of presumption is licensed when the particles are used. As discussed in the preceding chapter, it is important to note that UFPs should be treated as different tonemes rather than allotones even though they have the same modal base.

When language users apply the particles in question, each of them refers to a different source of knowledge stored in the common ground. The source of knowledge plays an important role in differentiating the nature of the particle with level tone and that of the particle with contour tone. For the use of the particle *bā*, the **intersubjective** knowledge is marked on the proposition made by the

speaker for the purpose of reminding the listener that such information should have been known to them. This type of knowledge can be either shared between both parties of interlocutors or available to anyone as common knowledge. On the other hand, the particle *bǎ* serves to express the **subjective** knowledge on the basis of the personal experience from the speaker themselves. That is, the speaker is the only person who should be responsible for the truth of the proposition. In general, when these particles are present, specific information can be retrieved from certain places for particular purposes that would make the communication more efficient without mentioning certain information again and again.

Syntactic restrictions on the uses of these particles are also examined. In general, due to their semantic features, the linguistic items with presumptive mood appear not to fit with neither polar interrogatives nor content interrogatives. In addition, the presumptive force reflected by the particles and interrogative force appear to compete and clash with one another. The presumptive words should not take over the scope of the copula or proposition.

On top of modal properties, we looked into the discourse effects of the particles in question. The **dissatisfied** and **sarcastic** effects appear not to be an inherent property for the particle *bā*. They are in fact context-dependent, as a result of pragmatics. On the other hand, the function as a **rhetorical device** for the particle *bǎ* can be taken from the discourse the particle is present. What is more, UFPs can be used in a **discourse-initial** position which is not an **out of the blue situation**.

The discussion of modal harmony of the particles and their quantificational force is also offered. Generally, both particles are considered to be a member of **possibility** group. The particles with contour can be stacked with other modal items of both necessity and possibility. On the other hand, the particle with level tone is rarely collocated with words denoting indetermination due to its intersubjective feature.

In the last part of this chapter, we discussed discourse relations that are licensed by the particles *bā* and *bǎ*. Similar to the particles *ā* and *ǎ*, the particles in question are associated accordingly with discourse relations of **Explanation**,

Elaboration and **Contrast**. In other words, utterances with these particles applied can be seen as a means to explain, elaborate and contrast ideas.

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Chapter 6

Conclusion

In this concluding chapter, we briefly summarise the work of the current study and its significance in advancing disciplinary understandings. What is more, we highlight the implications and relevant suggestions for the future work which are connected to the current research.

6.1 Formulation of the research questions

Utterance-final particles (UFPs), as a category, are elusive to characterise due to their notoriously ambiguous nature and lack of clear lexical meaning. Existing approaches appear to be insufficient to pin down a core meaning and to distinguish the effect of the particle being either present or absent. In order to fill this gap, we look at the communicative functions of UFPs *ā*, *ǎ*, *bā* and *bǎ* in Mandarin from a semantic and pragmatic perspective. As a consequence, our analysis has managed to address the research questions in the current study. The following is a brief introduction to how these questions are answered by this thesis:

i. What modal and discourse properties do UFPs carry in Mandarin?

   After examining the data within a wider range of contexts, we suggest that UFPs carry particular fundamental modal properties for the purpose of communication. In general, these fundamental properties may have an impact on restrictions of use in different sentence types. On top of modal properties, the effects of the particles in discourse are investigated.

When these particles are present, particular discourse effects may emerge accordingly.

ii. When UFPs are applied, what information do speakers share with listeners in respect of organising the common ground?

When using UFPs, speakers can refer to a particular source of knowledge stored in the common ground. The knowledge is indexed on the proposition for the purpose of reminding listeners that such information should have been known to certain groups of people. In general, this rather more elaborate notion of common ground is useful for our interpretation of utterances with enriched meaning that is reflected by the particles. With these particles applied, communication can be more efficient without laboriously saying out loud certain information many times, which presumably helps communication on balance.

iii. How are pairs of UFPs that contrast only in pitch height fundamentally different from one another?

Even though particular pairs of UFPs share a number of similarities, these particles with contrasting heights of pitch should not be treated as allotones. On the basis of our observation, we suggest that the source of knowledge has an important role in differentiating the nature of the particle with level tone and that of the particle with contour tone.

iv. What discourse relations can be licensed by UFPs?

Speakers can make use of UFPs to increase the coherence of a discourse as discourse connectives do. When these particles are present, particular discourse relations such as Explanation, Elaboration and Contrast can be licensed to facilitate the processing of information. As a result, it may be easier for listeners to follow the logic of what is intended beyond the literal meaning.

6.2 The research so far

The current study has shed light on the use of UFPs in Mandarin, illustrating how speakers make use of these particles to communicate and interact with their listeners in an efficient fashion. The following briefly summarises the preceding chapters of this thesis.

Chapter 2 summarises a wide variety of prior studies in UFPs in Mandarin. Most of these studies are either from a **maximalist approach** that identifies a number of multiple senses for one particle or from a **minimalist approach** that treats the particle as a radical monoseme that generates a core meaning. After observing these major approaches, we note that both of these approaches are insufficient to account for the observed data. On the one hand, the maximalist fashion is less likely to avoid yielding too many irrelevant functions for the particles that are derived from the context. On the other hand, a number of contextual interpretations that are suggested by the minimal fashion seem to be too specific to cover all of the uses in the broader discourse when the particles are present. In addition, we revisit the definitions of modal particles (MPs) and discourse particles (DPs) and the challenges that were encountered by virtue of the fact that UFPs are often claimed in the literature to belong to one or the other of these classes. On the basis of their characteristics, we suggest that UFPs conform to the categorisation of MPs. Finally, an experiment is carried out and shows that the sense of **surprise** appears comparatively to be more relevant to the use of the particle *ā* as opposed to other selected senses. This quantitative study presents us a different approach to examine whether or not the claimed senses of UFPs in the existing literature are firmly supported by the general audience.

Chapter 3 introduces relevant mechanisms and technical notions which are applied in the analysis of other languages. Specifically, they are practically useful for our analysis of UFPs. From a crosslinguistic point of view, we discuss the application of German MPs in the middle field by probing the belief system of

individual interlocutors. As an indicator of **common ground**, these particles illustrate the status of respective propositions concerning the discourse contexts. Nonetheless, in order to get a bigger picture of the meaning and function of UFPs, we are required to have a more sophisticated model for a clearer representation of discourse processes. In particular, we point out that the notions of **modal properties**, **discourse effects** and (**inter**)**subjectivity** that can be reflected by the particles are potentially important in our analysis of the interpretation and use of these particles.

Chapter 4 analyses the interpretation and use of the particles **ā** and **ǎ** in Mandarin. Based on our observation within a wide range of contexts, we suggest that the sense of **unexpectedness**, rather than other senses claimed in the literature such as *surprise*, is a fundamental modal property shared between both particles. Even though these particles relate to the same modal base, they should not be treated as allotones. In order to tell them apart, the notion of (inter)subjectivity serves as an integral part of the essence of UFPs. For the use of the particle *ā*, the **intersubjective** knowledge is indexed on the proposition made by the speaker in order to remind the listener that such information should have been known to them. On the other hand, the particle *ǎ*, as a **rhetorical device**, can be used to license the **subjective** knowledge based on the personal experience from the speaker themselves. On top of their modal properties, particular discourse relations such as **Explanation**, **Elaboration** and **Contrast** are licensed by these particles, which interlocutors can rely on in order to understand how discourse units are logically linked together as a coherent discourse. Overall, the current study offers us a novel way to look at the meaning and function of these notoriously ambiguous particles without focusing too much on the properties that are considered to be either too general or too specific and that are often derived from particular contexts.

Chapter 5 analyses the interpretation and use of the particles **bā** and **bǎ** in Mandarin. Both particles can be applied to encode the sense of **presumption** in an utterance as a fundamental modal base. Similar to the particles *ā* and *ǎ*,

the particle *bā* can impose the **intersubjective** knowledge on the proposition in order to point out that such information has already been available in the common ground shared between both particles of the conversation. On the other hand, the particle *bǎ* serves as a **rhetorical device** to reflect the **subjective** knowledge on the basis of the personal experience which the speaker is in general responsible for the truth of the proposition. Once again, the notion of (inter)subjectivity has an important role in distinguishing the particles with level tone and with contour tone. As for discourse relations, we suggest that the particles *bā* and *bǎ* are associated with particular discourse relations such as **Explanation**, **Elaboration** and **Contrast** as the particles *ā* and *ǎ* are. What is more, we point out that UFPs can be employed in a **discourse-initial** position which is not an **out of the blue situation**. In general, the methods that have been developed for the analysis of the particles *ā* and *ǎ* in the fourth chapter can be equally applied to the particles *bā* and *bǎ* in the fifth chapter.

6.3 Future research

The current study provides us a further step towards the better understanding of UFPs in Mandarin. Nonetheless, this is definitely not the last word of the research in the interpretation and use of UFPs. There are still a number of crucial points which may require further investigation.

Firstly, many UFPs in Mandarin such as *ma*, *ne*, *o* and *la* are yet to be explored with regard to their modal properties, discourse effects, (inter)subjectivity and pitch heights. To better understand the system of UFPs that are heavily used in our daily conversation, it may be practically useful when the approach that has been developed in this study is extended to other UFPs in Mandarin. Besides, crosslinguistic investigations may offer us a more complete picture for our understanding of these particles.

Furthermore, even though UFPs clusters are not permitted in Mandarin or at least not permitted in the majority of the Mandarin dialects that we have known of so far, it is not uncommon for UFPs to cluster in languages such as

Cantonese and Taiwanese just as MPs do in the middle field in languages such as German and Dutch. A question arises as to how multiple particles compete against one another in the modal cluster when they are deployed together to reflect the common ground management and to license discourse relations.

There are also experimental studies that would be worth carrying out. For example, as represented in the fourth and fifth chapters, the modal harmony of the particles *ā*, *ǎ*, *bā* and *bǎ* and their quantificational force are briefly explicated on the basis of the data. However, the quantificational force can be measured in a more sophisticated fashion through quantitative studies such as grading the possibility that is licensed by the particles. Moreover, unlike DPs which explicitly license a discourse relation between discourse units, UFPs associate discourse units and form a meaningful relation between them in a more implicit fashion. A question arises as to whether or not comprehenders would take longer to process the utterance in order to reconstruct the coherent discourse when UFPs are applied.

Last but not least, the first and second language acquisition of UFPs in Mandarin have not been extensively studied either from a qualitative or a quantitative perspective. Given their nuanced similarities and differences between different UFPs, it would be both theoretically and practically interesting to know the developmental trajectory of these particles in Mandarin speaking monolingual and bilingual children and adults.

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Appendix

A sample material for the experiment of ā

(1) Háizi shēng xiàlái jiùyào hǎohǎo dài tā **ā**.
child born come-down need good carry 3SG PART
'Take good care of your child after he was born **ā**.'

(2) Lái **ā**.
come PART
'Come **ā**.'

(3) Nǐ yǒu méiyǒu xìngqù cān sài **ā**?
2SG POS NEG interest participate competition PART
'Are you interested in participating in the competition **ā**?'

(4) Shì shéi shuōde **ā**?
COP who say-STR PART
'Who said it **ā**?'

(5) Nǐ méi shuō shénme shíhòu ná gěi nǐ **ā**.
2SG NEG say what time bring towards 2SG PART
'You did not say when to give it to you **ā**?'

(6) Tā zǎo jiù sǐle **ā**.
3SG early already die-PFV PART
'He already passed away long time ago **ā**.'

(7) Dàizi shàng xiěde shì zhège diànhuà **ā**.
bag on write-STR COP this phone PART
'This was the phone number written on the bag **ā**.'

(8) Nà yě shì tāde mèngxiǎng zhīyī **ā**.
that also COP 3SG-STR dream one-of PART
'That is also one of his dreams **ā**.'

(9) Zhuānxīndì zhǔ kāfēi **ā**.
concentrate-STR make coffee PART
'Concentrate on making coffee **ā**.'

(10) Zhòng shù jiùxiàng péiyù réncái yīyàng **ā**.
plant tree like nurture talented-people same PART
'Planting trees is like nurturing talented people **ā**.'

(11) Jǐngchá yīnggāi zhīdào **ā**.
police should know PART
'The police should know **ā**.'

(12) Gōngkè huì yǐngxiǎng chéngjī **ā**.
homework will affect grades PART
'Homework will affect grades **ā**.'

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