

# THE SYNTAX OF MANDARIN SENTENCE-FINAL PARTICLES AND THE INTERACTIONAL STRUCTURE\*

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## 1. Introduction

In Mandarin Chinese, the term *sentence-final particle* has been used to describe a class of linguistic items whose categorial status is not clear (e.g. their functions depend on the specific extralinguistic context). Three examples containing sentence-final particles are given in (1a-c).

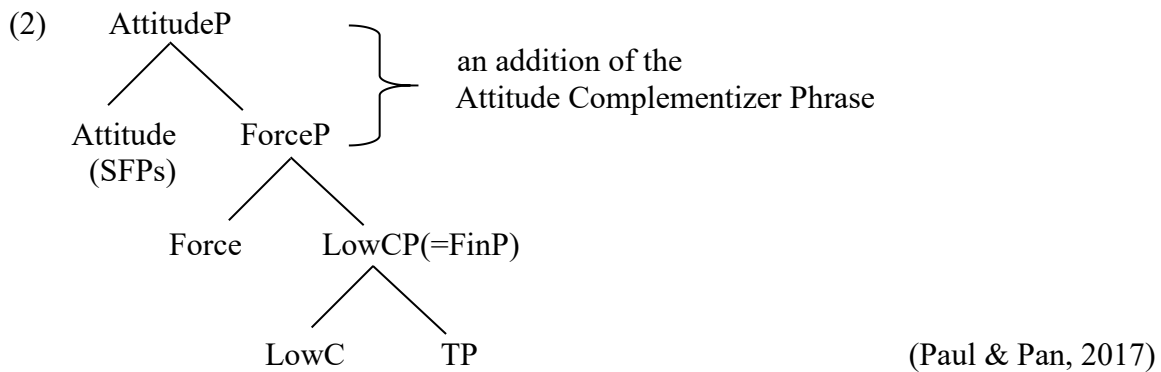
- (1) a. zhè dōngxi sānbaǐ yuán mǎi bù lái ne  
this stuff three-hundred CL buy NEG come particle  
'This stuff cannot be bought with three hundred Yuan (**believe me**).'  
(Lu 1990:264)
- b. zhè dào tí méi cuò ba  
this CL exercise NEG wrong particle  
'**Probably**, this exercise is not wrong.' (slightly modified from Yin 1999:103)
- c. Nǐ juéde zhème gàn duì ha?  
you think like.this do right particle  
'You think it is right to do this, **eh?**' (Yin 1999:99)

Traditionally, these particles are not considered as part of the sentence structure and hence have no syntactic category. However, some recent work on sentence-final particles (henceforth SFPs) has argued that SFPs play a significant role in syntax (Li 2006; Paul 2014; Paul & Pan 2017; Pan 2014, 2017, 2019; among others). Building on Rizzi's (1997) analysis of Complementizers (Cs) and their projections (CPs), Paul and Pan (2017) propose that the Mandarin C system consists of three subprojections LowCP, ForceP and AttitudeP, as shown in (2). They propose that in addition to the CP categories which Rizzi (1997) proposes, Mandarin requires an additional AttitudeP. This is a category that realizes content expressing the speaker's or addressee's<sup>1</sup> attitude to the propositional content.

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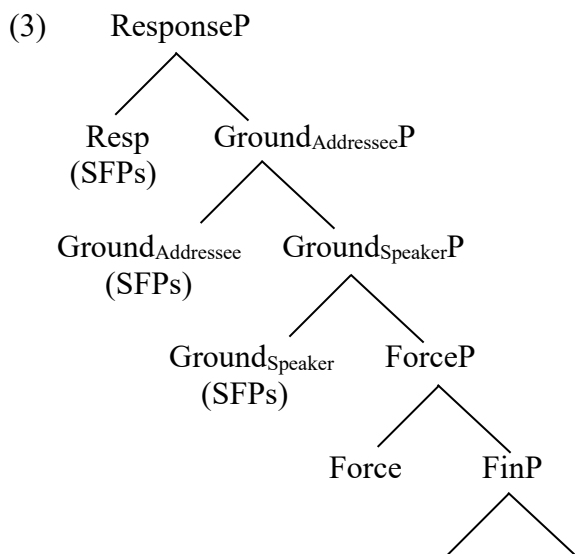
\* I thank Elizabeth Ritter for her encouragement and support throughout the writing process of this paper. I also thank Martina Wiltschko and her book *the grammar of interactional language* which inspires me to reflect on the syntax of Mandarin sentence-final particles.

<sup>1</sup> Some authors use the terminology "addressee" while other authors use the terminology "hearer", in this paper I use "addressee" throughout following Wiltschko (2021).



According to Paul and Pan (2017), SFPs are fully-fledged functional heads on a par with C elements in Indo-European languages. SFPs realizing LowCs are comparable to the heads of Rizzi's FiniteP. The neutral label "LowC" is chosen because it is unclear whether the [+/- Finite] distinction applies to Mandarin (p.52). They propose that Mandarin SFPs that express a certain attitude such as *a*, *ei*, *ou*, *ma*, *ne*, *ba* are analyzed as the highest C head, Attitude (p.51).

In other work, SFPs have been suggested to perform other syntactic functions. Wiltschko (2021) proposes that syntactic structure should not only represent the propositional content but should also represent interactions in discourse. On her view, SFPs are the units of language that represent interactions in discourse. Wiltschko (2021) proposes that the interactional content is represented in the interactional structure above CP. She further argues that the interactional structure itself consists of projections such as Ground<sub>Speaker</sub> Phrase, Ground<sub>Addressee</sub> Phrase and Response Phrase. Ground<sub>Speaker</sub> phrase encodes speaker's attitude towards the proposition while Ground<sub>Addressee</sub> phrase encodes what the speaker believes is the addressee's attitude towards the proposition. Response phrase is dedicated to letting the addressee know what the speaker wants the addressee to do with the current sentence. Wiltschko suggests that Mandarin SFPs that express an attitude associate with this interactional structure, as shown in (3).



## Fin TP

In the present paper, I argue that the subgroup of Mandarin SFPs that express an attitude are not part of the CP layer. Instead, these SFPs are part of the interactional structure (contra Paul and Pan 2017, Pan 2019; among others). Following Wiltschko (2021), I propose that these particles belong to different categories of the interactional structure and should be further divided into three distinct syntactic categories: Ground<sub>Speaker</sub> particles, Ground<sub>Addressee</sub> particles and Response particles. I focus my discussion on three representative particles, namely, *ne* 呢, *ba* 吧 and *ha* 哈. I suggest that *ne* is a typical Ground<sub>Speaker</sub> particle, *ba* is a Ground<sub>Addressee</sub> particle in some contexts and *ha* is a typical Response particle. My arguments are mainly based on the co-occurrence of Mandarin SFPs. I will show in detail that when co-occurring with other particles, Ground<sub>Speaker</sub> particles must appear closer to the host sentence than other particles. Ground<sub>Addressee</sub> particles must be located in between of the Ground<sub>Speaker</sub> particles and Response particles. Response particles can only appear in the sentence-final position following other particles. I will demonstrate that an analysis that assumes an interactional structure above CP can account for some poorly understood co-occurrence restrictions among these SFPs.

The organization of the paper is as follows: In section 2, I review some representative literature on Mandarin SFPs. In particular, I discuss why Paul and Pan's (2017) analysis, which treats SFPs as the highest complementizers, is inadequate in explaining strict word order observed among these particles. Section 3 reviews Wiltschko (2021), which investigates the interactional structures above the proposition structure. Wiltschko develops a new model that permits an account of the presence and position of interactional SFPs. Section 4 discusses three representative Mandarin SFPs that are associated with interactional structure, namely *ne*, *ba* and *ha*. Section 5 concludes the paper.

## 2. Previous literature on Mandarin sentence-final particles

Mandarin SFPs have been examined under the generative framework (Li, 2006; Paul & Pan, 2017; Pan, 2015, 2017, 2019; among others). In this section, I review the analysis proposed by Paul and Pan (2017) since it is the most relevant piece of work to the present paper.

The core proposal of Paul and Pan (2017) (see also Pan 2019 for a much more detailed analysis) is that Mandarin has a three-layered split CP structure (LowC<Force<Attitude) and SFPs are complementizer heads that realize each layer of the split CP, as shown in Table 1.

**Table 1.** The three layers in the split CP

C1 (LowC)	C2 (Force)	C3 (Attitude)
lower subprojection of LowCP; <i>le</i> currently relevant state; <i>laizhe</i> recent past	<i>ba</i> <sub>imp</sub> (advisative <i>ba</i> ); <i>ba</i> <sub>Qconfirmation</sub> ; <i>ma</i> yes/no question .....	<i>a</i> softening; <i>ei</i> gentle reminder; <i>ou</i> impatience, surprise; <i>ma</i> dogmatic assertion; <i>zhene</i> intensifier.....
higher subprojection of LowCP <i>éryǐ</i> 'only'		lower layer Attitude <i>ne</i> <sub>3</sub> <sup>2</sup> exaggeration < higher layer Attitude <i>ba</i> probability

(simplified Table from Paul & Pan 2017: 51)

As indicated in Table 1, SFPs realize three distinct layers of CP. Particles such as *le* and *laizhe* express Tense (Zhu, 1982: 9) and occur nearest to the host sentence; they are the Low Complementizer heads (LowCs). Paul and Pan (2017) further divide LowCP into two subprojections and argue that SFP *éryǐ* belongs to a higher subprojection of LowCP (hence there are two separate columns under C1). The second class of SFPs consist of particles such as *ba*<sub>imp</sub>, *ba*<sub>Qconfirmation</sub>, and *ma*<sub>yes/no question</sub> which all convey a type of Force and belong to a higher layer of CP, the Force CP. The highest layer of CP is headed by a group of particles which encodes the speaker's attitude or feelings about the proposition. Below I cite from Paul and Pan (2017) three examples containing particles from each of the three different layers of CP.

- (4) a. Zuótiān xià yǔ **le/laizhe**  
yesterday fall rain LowC/LowC  
'It rained yesterday.'
- b. Nǐ míngnián qù Běijīng **ma?**  
2SG next.year go Beijing ForceC  
'Will you go to Beijing next year?'
- c. Déguó yǔyánxuéjiā kě duō **ne!**  
German linguists really many AttC  
'There really are a lot of German linguists!'

(4a-c; Paul & Pan 2017, p.51 & p.55)

What is crucial for the present paper is that Paul and Pan (2017) further divide Attitude CP into two subprojections and argue that Attitude complementizer phrase headed by *ba* is always higher than the Attitude CP headed by *ne* (hence there are two

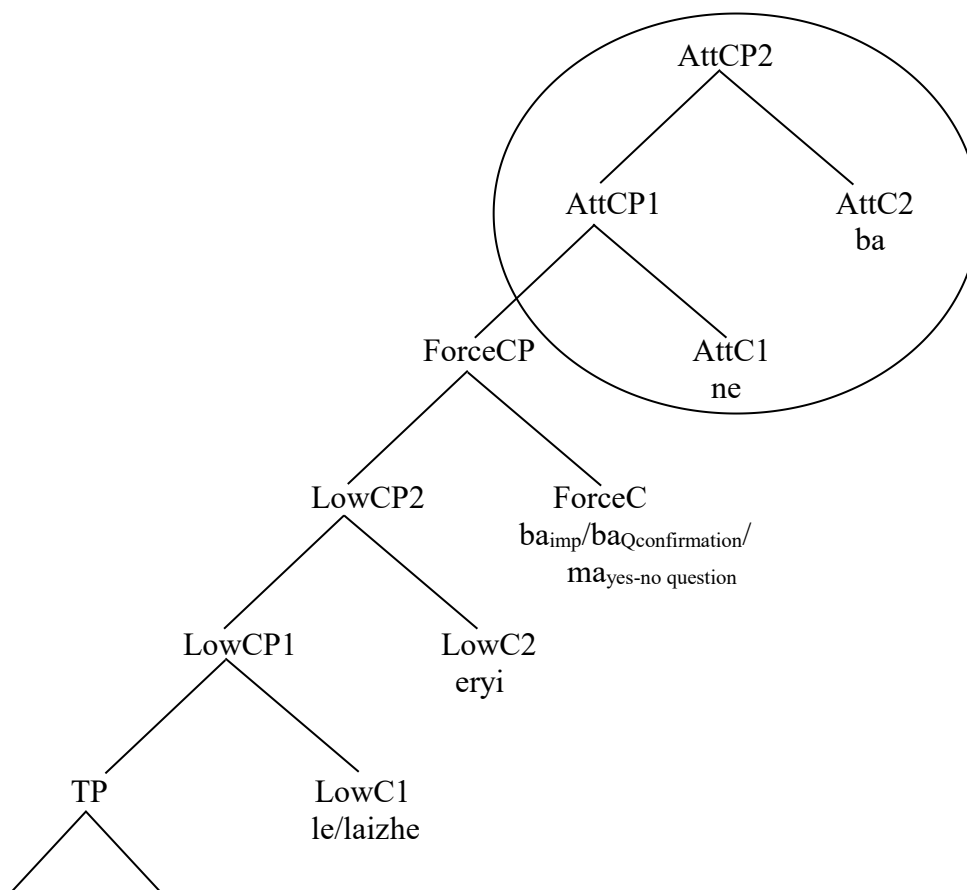
<sup>2</sup> Here the subscript 3 distinguishes *ne*<sub>3</sub> from other two homonyms *ne*<sub>1</sub> and *ne*<sub>2</sub>. However, since I only focus on the SFPs that express attitude, the fact that in Mandarin there may be a *ne*<sub>1</sub> (a LowC) and a *ne*<sub>2</sub> (a Force C) is not relevant for the present paper.

columns under C3). According to Paul and Pan (2017), sentence (5a) contains two Attitude heads, *ne* and *ba*. The order for these two co-occurring SFPs is fixed: *ne*<*ba* is possible in Mandarin but not *ba*<*ne*, as shown in (5a-b).

- (5) a. [ATT2P [ATT1P [TP Sānshí nián qián hái méi yǒu shǔbiāo] **ne**] **ba**  
 thirty year before still NEG have mouse ATT1 ATT2  
 ‘Thirty years ago, very probably there didn't even exist anything  
 like a computer mouse.’
- b. \*[ATT2P [ATT1P [TP Sānshí nián qián hái méi yǒu shǔbiāo] **ba**] **ne**  
 thirty year before still NEG have mouse ATT1 ATT2  
 (Paul & Pan 2017: 67)

Paul and Pan argue that the fixed order among co-occurring particles is a reflection of their structural hierarchy. On their analysis, the structure of a Mandarin sentence containing SFPs can be roughly represented as in (6). I circle the highest Attitude CPs in (6) since they are the focus of the present paper.

(6)



However, the main shortcoming of this analysis is that since all particles that express attitude are analyzed uniformly as the highest complementizers, their analysis gives no satisfactory syntactic account for the strict word order among these SFPs. For instance, why does particle *ne* always precede other particles such as *ba* but the reverse order is never attested in Mandarin? In other words, as linguistic items that express speaker's feeling (e.g. surprise) and complete the sentence, it might be expected that these particles can appear in a relatively flexible order. However, this is not the case.

What makes the split CP analysis even more problematic is the observation that the proposed 'higher attitude complementizer AttC2 *ba* (probability)' can itself be followed by other particles.<sup>3</sup> For instance, particle *ha* can occur after *ba* but cannot precede it (7a-b). In Paul and Pan's analysis, there is no position above the AttC2. Consequently, sentences such as (7a) cannot be accounted for using the Attitude CP system proposed by Paul and Pan (2017).

- (7) a. Sānshí nián qián hái méi yǒu shǔbiāo **ne** **ba**, **ha?**  
 thirty year before still NEG have mouse ATT1 ATT2 particle  
 'Thirty years ago, very probably there didn't even exist anything like a  
 computer mouse, eh?'  
 b. \*Sānshí nián qián hái méi yǒu shǔbiāo **ne** **ha**, **ba?**  
 thirty year before still NEG have mouse ATT1 ATT2 particle

Note that it is in fact difficult to find examples that contain three particles that express attitude, but to the extent that such examples are possible, the order is fixed, as indicated by the contrast in (7a-b). Examples containing co-occurring *ba* and *ha* have also been discussed in the literature. Yin (1999) offers the example in (8). He puts a pause marker between the two SFPs (instead of a comma) and notes that the pause needs not to be very long, which further supports that the final particle *ha* is not outside of the clause.

- (8) Zhè dào tí méi cuò **ba** [pause marker] **ha?**  
 this CL exercise NEG wrong ATT2 particle  
 'Probably, this exercise is not wrong, eh?' (Yin 1999:103)

Unlike sentences with three co-occurring particles, which are very rare, there are numerous sentences containing a pair of co-occurring particles *ne* and *ba* or *ba* and *ha*. Adopting Zhu's (1982) notion of transitivity which suggests that if a given SFP A precedes SFP B and B precedes C, then necessarily A must precede C, it can be concluded that three syntactic positions are needed for Mandarin SFPs. Analyzing SFPs that express attitude as complementizer heads fails to explain why, within an uniform

<sup>3</sup> Note that Paul and Pan (2017) have not specifically discussed the properties of particle *ha*. According to Table 1, there are two plausible positions for *ha*. *ha* can either function as a Force marker or a particle that express attitude. However, in sentences such as (7a), if *ba* is in the highest AttP head, and *ha* is a head that is to the right and structurally higher than *ba*, then there is no position for *ha* in Paul and Pan's representation.

category, some SFPs must precede other particles while others must follow. In order to account for the word order in (7a), we can certainly further divide AttCP into AttCP1, AttCP2 and AttCP3 with particle *ha* in the highest Attitude complementizer head position. However, by doing this, we are merely describing the surface word order of a sentence and not providing any explanation as to why SFPs must appear in the pattern of *ne<ba<ha*, but not in any other orders.

### 3. Interactional structure above the CP

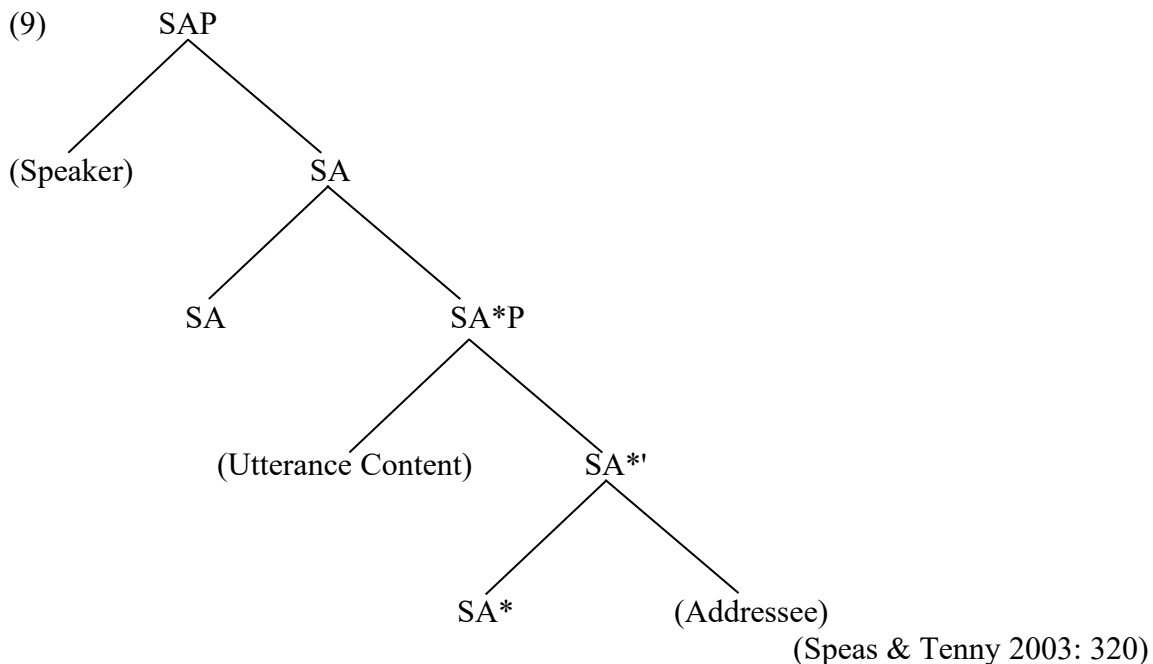
In this section, I briefly discuss Wiltschko's (2021) interactional structure model. I will first discuss Ross's (1970) analysis of the Speech Act structure. Then, I will introduce Speas and Tenny (2003) which attempts to update Ross's analysis. Following insights of Ross (1970) and Speas and Tenny (2003), Wiltschko (2021) proposes another updated version of the Speech Act structure. I will focus my discussion on how Wiltschko's (2021) interactional structure model differs from Speas and Tenny (2003).

Ross (1970) hypothesizes that sentence structure (the proposition structure; p structure) is dominated by a Speech Act structure (SA structure). The SA structure is comprised of a Speaker role (*I*) an Addressee role (*you*) and a performative verb. For example, Ross proposes that a declarative sentence such as *Prices slumped* is derived from the deep structure *I tell you that prices slumped* which contains a performative *tell* (p.224). This SA structure captures the fact that discourse is a communicative event between the speaker and the addressee. Ross was one of the first researchers to propose that the aspects of the interaction between the speaker and addressee are represented in syntax.

Speas and Tenny (2003) point out several shortcomings with Ross's (1970) analysis. First of all, a sentence of any form may be used to perform any act. For instance, the English sentence *Are you crazy* may be used either as an interrogative question or a statement of outrage (p.317). This observation directly invalidates Ross's claim that every sentence is associated with an explicit speech act. Second, the core claim from Ross is that sentences with overt performative verbs such as *I tell you that prices slumped* have the same deep structure as equivalent sentences without overt performative verbs such as *Prices slumped*. However, the problem of this claim is that it is impossible to know the exact predicate of the deep structure (p.338). For instance, a sentence such as *prices slumped* may have *I report to you that prices slumped* as its deep structure instead of *I tell you that prices slumped*. Since it is impossible to determine what the specific performative verb in the deep structure is, Ross's claim that every declarative sentence corresponds to one and only one performative sentence is invalid.

As a result of the flaws with Ross's analysis, Speas and Tenny reject Ross's core proposal which suggests that declarative sentences must be derived from abstract deep structures containing a performative verb. However, Speas and Tenny note that Ross is on the right track in that the notion of a Speaker and an Addressee role do have some kind of representation in syntax (p.323). Speas and Tenny update Ross's hypothesis by discarding concepts such as deep structure, a covert higher clause and performative verbs.

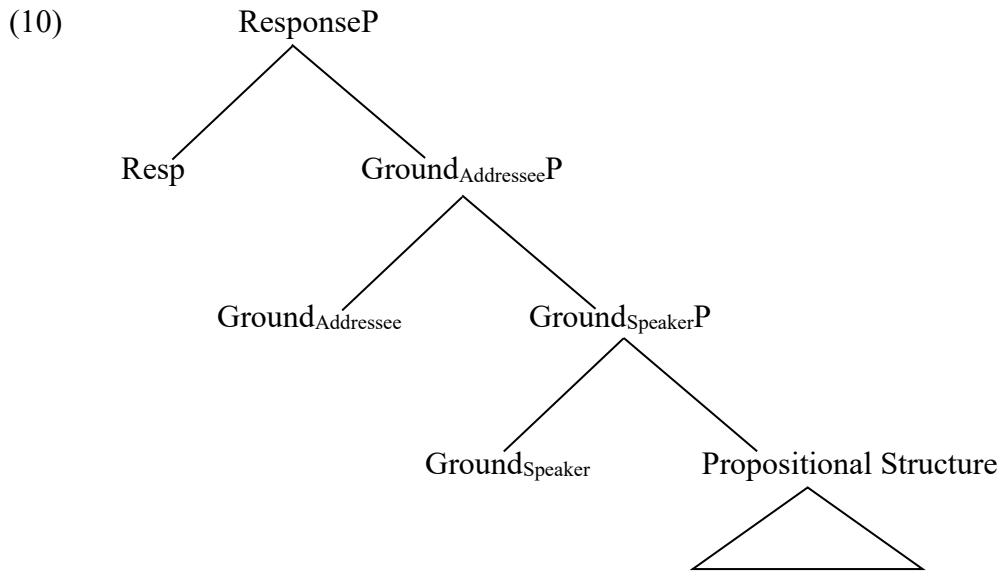
Instead, they propose functional Speech Act Projections above the CP. A declarative sentence will have the following Speech Act structure:



For Speas and Tenny, the pragmatic roles Speaker and Addressee are represented in syntactic structure. These roles fall into a structural hierarchy and are constrained by the same principles as the propositional content of the sentence. The Speaker can be thought of as the agent of the speech act, the Utterance Content as the theme and the Addressee as the goal. Speas and Tenny suggest that the SA layer of a declarative sentence has the structure of a ditransitive predicate with the speaker giving the utterance content to the addressee.

Like Speas and Tenny, Wiltschko argues that syntax should include a Speech Act structure which consists of functional projections. In order to capture the complexity of interactions in conversations, Wiltschko (2021) proposes an interactional structure that regulates interactions between interlocutors. Wiltschko proposes two core functions of this interactional structure. First, this interactional structure serves to manage the common ground between the interlocutors (common ground refers to background information shared by participants in a conversation; Stalnaker, 1978). Second, interactional structure aids the interplay between initiating and reacting moves in a conversation, such as turn-taking (Wiltschko 2021:3). In order to realize these two functions of interactional structure, Wiltschko proposes three specific functional projections: a  $\text{Ground}_{\text{Speaker}}$  Phrase, a  $\text{Ground}_{\text{Addressee}}$  Phrase and a Response Phrase, as shown in (10).





(simplified diagram from Wiltschko 2021:108)

The Grounding Phrases manage the common ground between the interlocutors.  $\text{Ground}_{\text{Speaker}}$  phrase encodes the speaker's attitude towards the proposition and  $\text{Ground}_{\text{Addressee}}$  phrase encodes what the speaker believes is the addressee's attitude toward the proposition. The Response Phrase serves to aid interplay between initiating and reacting moves and regulate interactions such as turn-taking. It encodes what the speaker wants the addressee to do with the utterance.

Crucially, Wiltschko's proposal of the interactional structure differs from Speas and Tenny's analysis (2003) of the Speech Act structure in the following two respects. First, Wiltschko argues that speech acts involve more than simply the speaker gives the utterance content to the addressee (as suggested by Speas and Tenny). Instead, Speech Act structure should represent complex interactions between interlocutors. Speas and Tenny have not explored the possible complicated interaction between the Speaker and the Addressee in conversations and how syntax should reflect these complications. The second difference has to do with the specific structure of the SA phrase they put forward. According to Speas and Tenny, the Speaker argument is always higher than the Addressee argument. However, they give no empirical evidence in support of this proposal. In contrast to Speas and Tenny (2003), by drawing evidence from languages with multiple sentence-final particles, Wiltschko suggests that speaker-oriented projection is lower than the addressee-oriented projection (as shown in (10)).

#### 4. Analysis of Mandarin sentence final particles *ne*, *ha* and *ba*

In this section, I present my analysis of three Mandarin SFPs, *ne*, *ha* and *ba*. My core proposal is that these Mandarin SFPs should not be treated uniformly as complementizers (contra Paul & Pan 2017). Instead, I present evidence to show that they should be analyzed as  $\text{Ground}_{\text{Speaker}}$  particles,  $\text{Ground}_{\text{Addressee}}$  particles and Response particles in the

sense of Wiltschko (2021). I argue that *ne* is a typical Ground<sub>Speaker</sub> particle while *ba* is a Ground<sub>Addressee</sub> particle. For particle *ha*, I adopt the analysis of Yang and Wiltschko (2016) and Wiltschko (2021) that this SFP is a Response particle. I offer additional arguments based on distribution to support their analysis.

#### 4.1 Particle *ne* as a Ground<sub>Speaker</sub> particle

I present two types of evidence to demonstrate that *ne* is a Ground<sub>Speaker</sub> particle. First, its semantic interpretation suggests that particle *ne* functions as a Ground<sub>Speaker</sub> particle. Lu (1990) summarizes the conditions of use for *ne* as follows: *ne* indicates that the speaker believes a certain fact is obvious. It implies a sense of "look...I tell you this...you have to believe me" (p. 264), as shown in (11) [with my own translation].

- (11) Zhè dōngxī sān bǎi yuán mǎi bù lái **ne**.  
 this stuff three hundred CL buy NEG come particle  
 'You cannot buy this for three-hundred Yuan (**believe me**).' (Lu 1990: 264)

In (11), the use of *ne* indicates that the speaker strongly believes in this proposition. Since *ne* expresses that the speaker is certain about the proposition, it is reasonable to analyze *ne* as a Ground<sub>Speaker</sub> particle which encodes speaker's attitude towards the proposition.

Second, linear order restrictions indicate that *ne* is a Ground<sub>Speaker</sub> particle. When co-occurring with other interactional particles, *ne* always occur closer to its host sentence than any other particles, as shown in (12a-b).

- (12) a. Nǐ dāngshí hái méi chū guó **ne** **ba**  
 you that.time still NEG go.out country particle particle  
 'Probably, you were not abroad yet at that moment!'
- b. \*Nǐ dāngshí hái méi chū guó **ba** **ne**  
 you that.time still NEG go.out country particle particle

When co-occurring with other particles such as *ba*, particle *ne* must appear closer to the host sentence. When *ne* is farther from the host sentence than *ba*, the sentence is ungrammatical. Also note that Pan (2019) discusses other particles that can follow *ne* (but can never precede *ne*) such as *ma*, *la*, *a*, *ei*, *bei*, *lei*, *na* and *ya* (p.78 and p.84). It appears to me that it is reasonable to analyze these particles as Ground<sub>Addressee</sub> particles and this explains why those particles can only follow *ne*. For the sake of space, I will not provide evidence to support this claim in this paper. This linear order restriction is in line with analyzing *ne* as a Ground<sub>Speaker</sub> particle, which is the lowest position in the interactional layer. As a Ground<sub>Speaker</sub> particle, it comes as no surprise that *ne* can never follow other interactional particles.

## 4.2 Particle *ha* as a Response particle

Yang and Wiltschko (2016) discuss the form, distribution and function of the Mandarin confirmational marker *ha* in detail. In what follows, I first summarize their analysis of the interpretative content of *ha*. They show that the interpretative content of *ha* qualifies it as a Response particle. Then I add distributional evidence to support their analysis that *ha* is a Response particle.

Yang and Wiltschko (2016) argue that particle *ha* is often used to request confirmation. The declarative sentence (13a) is an assertion. In contrast, the same sentence followed by the particle *ha* (13b) is used for requesting a confirmation.

- (13) a. Nǐmen shì jiǔ diǎnzhōng kāi mén de  
 you:PL be nine o'clock open door NOM  
 ‘You opened at nine o'clock.’
- b. Nǐmen shì jiǔ diǎnzhōng kāi mén de **ha**  
 you:PL be nine o'clock open door NOM particle  
 ‘You opened at nine o'clock, **right?**’ (13a-b; Yang & Wiltschko 2016: 68)

As shown in (13b), particle *ha* indicates that the speaker explicitly requests a response from the addressee. This pragmatic function indicates that *ha* can be analyzed as a Response particle, on a par with the English Response particle *eh*. Aside from Yang and Wiltschko (2016), other researchers such as Yin (1999) and Cui (2011) also suggest that the primary function of *ha* is to indicate a request for confirmation from the addressee.

If *ha* is indeed a Response particle, it is expected that *ha* can only occur at the sentence-final position after other particles. This prediction is borne out, as shown in (14a-b).

- (14) a. Zhè tiān kě zhēn lěng **ne**, **ha?**  
 this weather so really cold particle particle  
 ‘**(Believe me)** Today's weather is really cold, **eh?**’
- b. \*Zhè tiān kě zhēn lěng **ha**, **ne?**  
 this weather so really cold particle particle  
 Intended: ‘**(Believe me)** Today's weather is really cold, **eh?**’

As clearly reflected in (14a-b), when co-occurring with other particles such as *ne*, *ha* can only be located in the sentence-final position. It can never appear before *ne*. The position of *ha* therefore supports that *ha* is a Response particle. Yin (1999:102) also explicitly comments that *ha* must be put after other particles, such as *ne*. It cannot occur before other particles [with my own translation].

### 4.3 Particle *ba* as a Ground<sub>Addressee</sub> particle

Having discussed particles *ne* and *ha*, now I turn to particle *ba*. In some contexts, particle *ba* encodes that the speaker assumes that the addressee believes the propositional content to be true<sup>4</sup>. Compare the following examples.

(15) Scenario: Zhang is a little boy. One evening, he was struggling to finish his math homework. His mother noticed that Zhang had tears all over his face and she said the following:

- a. Zhè dào tí            hěn nán            **ba.**    Nǐ    juéde nǐ    bù  
 this CL exercise NEG difficult particle you think you NEG  
 huì zuò, dànshì wǒ    juéde    nǐ    néng zuò zhè dào  
 able do but I think you can do this CL

tí.

exercise

‘This exercise is very difficult (**I know you think it is hard**). You may think that you are not able to do it, but I think you can do it.’

- b. #Zhè dào tí            hěn nán            **ba.**    Wǒ    bù    zhīdào  
 this CL exercise very difficult particle I NEG know

nǐ De xiǎngfǎ.

you De thought

‘This exercise is very difficult (**I know you think it is hard**). I don't know what you think.’

In (15a), the use of particle *ba* indicates that the mother assumes her child Zhang believes that the math homework is hard. In (15b), the following utterance *wo bu zhidao ni de xiangfa* "I don't know what you think" makes it clear that the speaker has made no assumption about the addressee's belief towards the proposition. This contradicts the use of particle *ba*. When using *ba* in the above context, the speaker is expressing her assumption that the addressee believes the math homework is hard (speaker learns that the addressee believes the math homework is hard from the fact that the addressee is crying). Therefore, the well-formedness of (15a) and the infelicity of (15b) imply that *ba* must be an addressee-oriented particle that encodes the speaker's assumption that the addressee believes the proposition is true.

<sup>4</sup> It is common for Mandarin SFPs to be multi-functional and carry different meanings. It is therefore difficult to pin down the exact semantic contribution of a particle. Here I only focus on the contexts where *ba* functions as a Ground<sub>Addressee</sub> particle. In my unpublished manuscript, I suggest that in some contexts, confirmation yes/no question marker *ba*, standard yes/no question *ma* and particle *ha* shall all be analyzed as the highest Resp particle.

If *ba* is a Ground<sub>Addressee</sub> particle, it is predicted that *ba* can appear between a Ground<sub>Speaker</sub> particle and a Response particle. As shown already in examples (7) and (8) (repeat below as examples (16) and (17b)), this prediction is borne out.

(16) Sānshí nián qián hái méi yǒu shǔbiāo **ne** **ba**, **ha?**  
 thirty year before still NEG have mouse ATT1 ATT2 particle  
 ‘Thirty years ago, very probably there didn't even exist anything like a computer mouse, eh?’

(17) a. Shǒujī méi diàn le **ne** **ba.** (ne<ba)  
 cellphone NEG battery particle particle particle  
 ‘Probably, the cellphone has run out of battery.’ (Pan 2019: 77)

b. Zhè dào tí méi cuò **ba** [pause marker] **ha?** (ba<ha)  
 this CL exercise NEG wrong particle particle  
 ‘Probably, this exercise is not wrong, eh?’ (Yin 1999: 103)

Examples (16) and (17) show that particle *ba* is able to locate in between of *ne* and *ha*. The fixed order between particles *ne*, *ba* and *ha* (*ne*<*ba*<*ha*) favors analyzing *ne* as a Ground<sub>Speaker</sub> particle, *ba* as a Ground<sub>Addressee</sub> particle and *ha* as a Response particle. Note that the only acceptable order of these three co-occurring particles is *ne*<*ba*<*ha*, any other orders will be judged unacceptable.

## 5. Conclusion

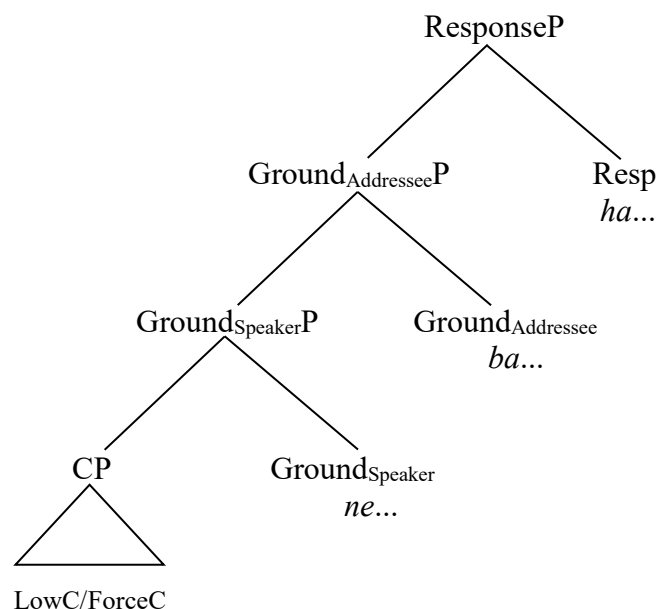
In this paper, I pointed out that previous analysis such as Paul and Pan (2017) cannot account for the strict linear order among co-occurring SFPs that express an attitude<sup>5</sup>. Following Wiltschko (2021), I argued that Mandarin interactional SFPs can be analyzed as Ground<sub>Speaker</sub>, Ground<sub>Addressee</sub> and Response particles (as shown in (18)). By associating particles such as *ne*, *ba* and *ha* with the interactional structure, linear order restrictions can be readily accounted for.

Aside from the arguments I discussed thus far, the following three facts should also be noted. First, it is widely acknowledged that Mandarin SFPs that express an attitude play a significant role in interactions. For instance, Paul (2015: 277) explicitly mentions that “attitude SPFs indicate the speaker's commitment to the sentence content...they are interactional and imply the obligatory presence of a hearer.” Consequently, it is

<sup>5</sup> The present analysis also has the following advantages: 1) particle *ha* is analyzed as the highest Resp not as a yes/no confirmation particle in the iForceP layer which explains why no other particles can follow *ha*; 2) standard yes/no question marker *ma* is analyzed as the highest Resp particle which accounts for why *ma* cannot be followed by any other particles; 3) Evidence can be found from phonetic fusion that supports the Ground<sub>Speaker</sub><Ground<sub>Addressee</sub><Resp hierarchy; 4) Evidence can be found from other Mandarin varieties that supports the Ground<sub>Speaker</sub><Ground<sub>Addressee</sub><Resp hierarchy; 5) the Subjectivity Scale Constraint (Pan 2019) supports the present analysis; 6) it gives an unified account; all particles are analyzed as interactional particles. For the sake of space, I will not discuss all these potential arguments in detail.

unsurprising to associate this group of particles with the interactional structure. Second, previous generative work (Paul, 2014; Pan and Paul, 2015; Paul & Pan, 2017; Pan, 2019; among many others) focus on demonstrating that Mandarin SFPs are important for syntactic analysis (e.g. particles are not acategorical). The present analysis does not contradict any previous work that claims SFPs project into functional phrases. The difference is that I associate SFPs with the interactional structure ( $\text{Ground}_{\text{Speaker}}$ ,  $\text{Ground}_{\text{Addressee}}$  or Response phrase) and not the CP layer. Third, the exact semantic contribution of Mandarin SFPs is notoriously difficult to pin down, however, as I have shown in this paper, the interactional structure model has the potential to provide new insights and deeper understanding to the properties of Mandarin SFPs. Taking all these facts into consideration, it appears to me that it is feasible to associate Mandarin SFPs with the above CP interactional structure.

### (18) Mandarin particles and the interactional layer



### References

- Cui, Xi Liang. 2011. The modality meaning and function of the inter-subjective marker "ha" in Mandarin Chinese. *Language Teaching and Linguistics Studies* 4: 39-45.
- Li, Boya. 2006. Chinese final particles and the syntax of the periphery. Doctoral dissertation, Leiden University.
- Lu, Shu Xiang. 1990. *Zhongguo wenfa yaolue [An outline of Chinese grammar]*. Beijing: The Commercial Press.
- Pan, Victor Junnan. 2014. Wh-ex-situ in Chinese: Mapping between information structure and split CP. *Linguistic analysis* 39: 371-413.
- Pan, Victor Junnan. 2015. Mandarin peripheral construals at syntax-discourse interface. *The Linguistic Review* 32: 819-868.
- Pan, Victor Junnan. 2017. Optional projections in the left-periphery in Mandarin Chinese. In *Studies*

- on *Syntactic Cartography*, ed. Fuzhen Si, 216-248. Beijing: China Social Sciences Press.
- Pan, Victor Junnan. 2019. *Architecture of the periphery in Chinese: cartography and minimalism*. London: Routledge.
- Pan, Victor Junnan and Paul Waltraud. 2015. Why Chinese SFPs are neither optional nor disjunctors. *Lingua* 170: 23-34.
- Paul, Waltraud. 2014. Why particles are not particular: Sentence-final particles in Chinese as heads of a split CP. *Studia Linguistica* 68(1): 77-115.
- Paul, Waltraud. 2015. *New perspectives on Chinese syntax*. Berlin: De Gruyter.
- Paul, Waltraud and Pan, Victor Junnan. 2017. What you see is what you get: Chinese sentence-final particles as head-final complementisers, in *Discourse particles—formal approaches to their syntax and semantics*, ed. Josef Bayer and Volker Struckmeier, 49-77. Berlin: De Gruyter.
- Rizzi, Luigi. 1997. The fine structure of the left-periphery. In *Elements of grammar*, ed. Liliane Haegeman, 281-337. Dordrecht: Kluwer.
- Ross, John Robert. 1970. On declarative sentences. In *Readings in English transformational grammar*, ed. Roderick A. Jacobs and Peter S. Rosenbaum, 222-272. Waltham, MA: Ginn & Co.
- Speas, Peggy and Tenny Carol. 2003. Configurational properties of point of view roles. In *Asymmetry in Grammar*, ed. Anna Maria Di Sciullo, 315-345. Amsterdam: John Benjamins.
- Stalnaker, Robert. 1978. Assertion. In *Syntax and Semantics: Pragmatics*, ed. Peter Cole, 315-332. New York: Academic Press.
- Wiltschko, Martina and Heim Johannes. 2016. The syntax of confirmational: A neo-performative analysis. In *Outside the clause: Form and function of extra-clausal constituents*, ed. Gunther Kaltenbock, Evelien Keizer and Arne Lohmann, 305-340. Amsterdam: John Benjamins.
- Wiltschko, Martina. 2021. *The grammar of interactional language*. Cambridge: Cambridge University Press.
- Yang, Xiaodong and Wiltschko, Martina. 2016. The confirmational marker *ha* in Northern Mandarin. *Journal of Pragmatics* 104: 67-82.
- Yin, Shi Chao. 1999. On mood particle *ha* and *ha* sentences. *Dialects* 2: 95-103.
- Zhu, De Xi. 1982. *Yufa jiangyi* [On grammar]. Beijing: The Commercial Press.