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# Why Chinese SFPs are neither optional nor disjunctors*

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**Abstract**

In a recent paper, Biberauer, Holmberg and Roberts (2014) claim that the Chinese sentence-final particles (SFPs) *ne* and *ma* only "double" the information encoded elsewhere in the sentence and are to be analysed as "acategorial" conjunctions. This contrasts with the current analysis of e.g. *ma* as an interrogative force head. The present article provides evidence in favour of the SFPs *ma* and *ne* as C-elements and challenges some of the preconceived ideas commonly encountered in the literature. Within the head-final split CP proposed for Chinese 'Low C < Force < Attitude', *ma* instantiates a Force head, whereas *ne* realizes the discourse-related AttitudeP, not a *wh*-question typing particle (*pace* Lisa L.-S. Cheng 1991). Furthermore, evidence is provided to show that the surface sentence-final position of SFPs in Chinese must be taken at face value.

**Keywords:** sentence-final particles (SFPs); head-final split CP; *yes/no* question; A-not-A question; Mandarin Chinese; antisymmetry; Final over Final Constraint (FOFC)

## 1. Introduction

In a recent paper, Biberauer, Holmberg and Roberts (BHR) (2014: 200-201) state: "In a survey of about 80 VO languages with final question particles, Bailey (2010, 2012) observed that these particles are very often optional (this is true of Mandarin *ne* and *ma*, for example). Presumably this is possible because the question force is signaled by some other means, such as intonation." [emphasis added]. Everybody working on Chinese will be surprised by this statement, because it presents *ma* as devoid of any inherent interrogative force. The reason why this view is so readily advocated by BHR (2014) is the fact that an analysis of Chinese sentence-final particles (SFPs) as Cs in a head-final CP above a head-initial TP challenges their presumably universal *Final-over-final constraint* (FOFC), which - put simply - excludes a head-final projection from selecting a head-initial XP as complement.[1]

The aim of the present article is to put the record straight with respect to the sentence-final particles (SFPs) *ma* and *ne* by providing a careful analysis and by challenging some of the preconceived ideas commonly encountered in the literature. The article is organized as follows. Section 2.1 gives a brief overview of the three-layered head-final split CP in Chinese. Section 2.2. invalidates the assumption that *ma* itself does not contribute interrogative force. Section 2.3 provides arguments showing that *ne* instantiates the head of the speaker/hearer-related projection AttitudeP above ForceP; accordingly, it is not a *wh*-question typing particle (*pace* Lisa L.-S. Cheng's (1991) clausal typing hypothesis). Section 3 argues that Bailey's (2012/2013) account cannot be applied to Chinese.[2] In her analysis, question particles are negative disjunctions in a head-initial XP whose complement has been elided, thus resulting

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[1] For a critical appraisal of the FOFC, cf. among others Djamouri, Paul, Whitman (2013); Haider (2013); Paul (2009; 2014; 2015, chapter 8 and references therein).

[2] While BHR (2014) refer to Bailey's doctoral dissertation as Bailey (2012) (2012 being the examination date), elsewhere her dissertation is cited as Bailey (2013) (2013 being the year of submission). In the following, we settle for Bailey (2012/2013) in order to indicate that we refer to the same work as BHR (2014).

in their surface sentence-final position. Section 4 demonstrates that there is no independent empirical evidence for a derivation à la Kayne (1994), where the sentence-final position of SFPs is obtained by raising of the TP complement to the left of the head-initial C. This leads to the conclusion in section 5 that the surface sentence-final position of SFPs in Chinese must be taken at face value.

## 2. The Chinese SFPs *ma* and *ne* as heads in a split-CP

### *2.1. The split CP in Chinese*

This section gives a very short and selective overview of the split CP in Chinese, concentrating on those points that are directly relevant to the issue at hand. (For an in-depth discussion, cf. Paul 2015, ch. 7, and references therein.)

Extending Thomas Hun-tak Lee's (1986) analysis of the *yes/no* question SFP *ma* as C to all SFPs, Paul (2009, 2014) establishes a three-layered CP for Chinese: 'Low C < Force < Attitude'. This split CP replicates the traditional division of SFPs into three distributional classes, based on their rigid relative ordering (cf. Zhu Dexi 1982: 207–213). It differs from Rizzi's (1997, 2004) split CP 'Finite < Force' in that there is an additional layer above ForceP, i.e. the speaker/hearer-related projection Attitude Phrase (also cf. Haegeman and Hill 2013, Haegeman 2014 for a similar DiscourseP above ForceP in Romanian and West Flemish). Given the still controversial status of finiteness in Chinese, the more neutral label "low C" is used instead of Rizzi's "FiniteP".

Examples (1-3) illustrate the low C *le* and *láizhe* . While *láizhe* indicates recent past, the only common denominator covering the multitude of different cases where *le* appears is that it "closes off" the sentence and relates the event to the speech time. (cf. Li & Thompson 1981: 238-300 for sixty pages of examples with *le*):

(1) Zuótiān xià yǔ le / láizhe / {* le láizhe / *láizhe le }[3]
yesterday fall rain LOWC/ LOWC LOWC LOWC / LOWC LOWC
'It rained yesterday.'

(2) Tā gāngcái hái zài bàngōngshì láizhe /*le
3SG just.now still at office LOWC/ LOWC
'He was in his office just now.'

(3) Tā bì yè *(le).
3SG finish study LOWC
'She has graduated.'

Being both low Cs, *láizhe* and *le* are mutually exclusive (cf. (1)). *Le* is unacceptable in (2) because the adverb *gāngcái* 'just now' explicitly locates the event in the past, whereas *le* relates the same event to speech time. (3) finally illustrates a case where *le* is obligatory in order to "close off" the sentence.

Concerning the SFPs realizing ForceP, besides *ma* indicating a *yes/no* question (cf. (4)), there is also the so-called "advisative" *ba* in (5) encoding a softened imperative (cf. Chao 1968: 807):

(4) Tā bì yè le ma / *ma le ?
3SG finish study LOWC FORCE/ FORCE LOWC
'Has she graduated?'

[3] The following abbreviations are used in glossing examples: CL classifier; EXP experiential aspect; NEG negation; PERF perfective aspect; PL plural (e.g. 3PL = 3rd person plural); SG singular; SUB subordinator.

(5) Kuài diǎnr zǒu ba
fast a.bit walk FORCE
'Walk a bit faster (please).'

(4) also illustrates the rigid order reflecting the strict hierarchy between the different layers of the split CP, in this case 'Low C < Force'.

Finally, the highest layer, AttitudeP, encodes the speaker/hearer's belief, attitude etc. with SFPs such as *ou* issuing a 'warning reminder' (which fuses into a single syllable with the preceding SFP). Like the other SFPs, Attitude SFPs must obey the strict ordering restrictions within the split CP, i.e. they may never precede low C nor Force heads:

(6) Bù zǎo l'ou [le + ou]/*ou le. Kuài zou b'ou [ba + ou] /*ou ba
NEG early LOWC+ATT/ ATT LOWC fast go FORCE+ATT/ ATT FORCE
'It's already late! Hurry up and go!' (Zhu Dexi 1982: 208)

To summarize this short overview, SFPs form a closed set of C-elements and instantiate the different layers in a split CP. The ordering restrictions among SFPs reflecting the fixed hierarchy 'Low C < Force > Attitude' can be neatly captured when they are analyzed as selecting and projecting heads.

*2.2.* Yes/no *questions and the interrogative force head* ma

Before turning to the detailed discussion of *ma* questions, two other types of *yes/no* questions are briefly presented, *viz*. the so-called "A-not-A questions" (cf. C.-T. James Huang 1982) and questions with rising intonation alone. This allows us to obtain a more complete picture of *yes/no* question formation in Chinese and to highlight at the same time the properties that distinguish *ma* questions from other types of *yes/no* questions.

A-not-A questions are formed by the juxtaposition of the predicate in its positive and negative form:

(7) Tāmen jīntiān lái bù lái?
3PL today come NEG come
'Do they come today?'[4]

Besides the subtle semantic difference between A-not-A questions and *ma*-questions (the latter encoding both neutral questions as well as questions containing a presupposition), A-not-A questions are also subject to syntactic constraints not observed for questions with *ma*. (For an exhaustive overview, cf. Hagstrom 2006.)

First, the presence of negation (cf. (8)), manner adverbs (cf. (9)) and certain epistemic adverbs (cf. (10)) blocks A-not-A question formation (cf. Ernst 1994), whereas the corresponding *ma*-questions are all well-formed:

(8a) Nǐmen míngtiān bù zài ma?
2PL tomorrow NEG be FORCE
'Are you not at home tomorrow?'

[4] As extensively discussed in Huang (1982), A-not-A questions are fundamentally different from disjunctive questions. This is the reason why in general A-not-A questions are not translated as disjunctive questions: 'Do they come today or not?'

(8b) *Nǐmen míngtiān bù zài bu zài?
2PL tomorrow NEG be NEG be

(9a) Tāmen rènzhēnde niàn shū ma?
3PL conscientiously study book FORCE
'Do they study conscientiously?'

(9b) *Tāmen rènzhēnde niàn bù niàn shū ?
3PL conscientiously study NEG study book

(10a) Tā yīdìng qù ma? (Ernst 1994: 243)
3SG definitely go FORCE
'Is he definitely going?'

(10b) *Tā yīdìng qù bù qù ?
3SG definitely go NEG go

Second, in A-not-A question, only *wh*-phrases in postverbal position can be interpreted as *wh*-indefinites (cf. (11a)), to the exclusion of preverbal *wh* adjunct phrases in (11b) (cf. C.-T. James Huang 1982: 169; ch. 4.1.2; Y.-H. Audrey Li 1992; Pan 2011, ch. 5 and references therein). In *ma* questions, however, a *wh* phrase in postverbal or preverbal position receives an indefinite interpretation (cf. (12a-c)):[5]

(11a) Nǐ yào bù yào chī shénme?
2SG want NEG want eat what
'Do you want to eat anything?'

(11b) *Nǐ [zài nǎlǐ ] niàn bù niàn shū ?
2SG at where study not study book
[Intended: 'Are you studying anywhere?']

(12a) Nǐ xiǎng chī shénme ma?
you want eat what FORCE
'Do you want to eat anything?'

(12b) Nǐ [zài nǎlǐ ] niàn shū ma ?
you at where study book FORCE
'Are you studying anywhere?'

To conclude, A-not-A questions and *ma* questions are subject to different syntactic and semantic constraints. In many cases, the question with *ma* is the only option available, which leads Hagstrom (2006: 211) to consider the *ma*-question as a "true" *yes/no*-question.

Let us now turn to *yes/no* questions that are formed by a rising intonation alone, illustrated in (13b) (cf. among others Chao 1968: 41, 801; Lu Jianming 1985: 236):

(13a) Tā zài Beǐjīng gōngzuò
3SG at Beijing work
'He works in Beijing.'

[5] As observed by Huang (1982, ch. 4.1.2), neither A-not-A questions nor *ma* questions allow for the *wh*-indefinite construal of the subject.

(13b) Tā zài Beǐjīng gōngzuò ↑ ?
3SG at Beijing work
'Does he work in Beijing?'

Importantly, there exist quite a few syntactic contexts in Chinese where the option of exclusively using intonation to encode a *yes/no* question is excluded.

In tag questions with *bù shì ma* 'isn't it (so)?', the SFP *ma* is obligatory and cannot be "replaced" by a rising intonation.

(14) Nǐ zài Beǐjīng gōngzuò, bú shì *(ma) ?
2SG at Beijing work not be FORCE
'You work in Beijing, don't you?'

Similarly, in the presence of *wh*-indefinite construals 'something, someone', a *yes/no* question requires the presence of *ma*, because otherwise the sentence - due to the rising intonation - is analysed as a *wh* question (cf. Victor Junnan Pan 2011: chapter 5):

(15a) Nǐ xiǎng chī diǎn shénme↑ ?
2SG want eat a.bit what
'What do you want to eat?'

(15b) Nǐ xiǎng chī diǎn shénme ma ?
2SG want eat a.bit what FORCE
'Do you want to eat a little something?'

(15c) Ta pà shéi huì dǎ ta↑ ?
3SG fear who will beat 3SG
'Who does he fear will beat him?'

(15d) Ta pà shéi huì dǎ ta ma ?
3SG fear who will beat 3SG FORCE
'Is he afraid that someone will beat him?'

In this respect, Chinese is on a par with English, where a *yes/no* question can be either formed by subject-auxiliary inversion (SAI) or by a rising intonation. Evidently, this does not imply that they are equivalent or that the existence of rising intonation renders SAI "optional" in the sense that it is not SAI that contributes the question interpretation. Quite on the contrary, Gunlogson (2001) provides extensive evidence to show that questions formed by rising intonation (her "rising declaratives") (cf. 16a) are clearly different from SAI questions (cf. 16b) and share properties with declarative sentences (her "falling declaratives").

(16a) It's raining?

(16b) Is it raining?

More precisely, "rising and falling declaratives share an aspect of conventional meaning attributable to their declarative form", and "…[the] declarative form (in contrast to interrogative) expresses commitment to the propositional content of the declarative". Accordingly, rising declaratives are not inherently questioning (Gunlogson 2001:v-vi).

Negative Polarity Items, for example, are licensed in SAI only, not in *yes/no* questions formed by rising intonation:

(17a) * You saw anyone↑?

(17b) Did you see anyone?

Furthermore, on a par with tag questions in Chinese, English tag questions cannot be formed by a rising intonation, but require SAI instead:

(18) You teach in Cambridge, don't you / *you don't ↑?

Finally, Ruan Lüna (2004: 23-25) and Wang & Ruan (2005:347) demonstrate the differences in intonation for Chinese *yes/no* questions with and without *ma*. The authors examine the acoustic properties of three types of sentences: (19a) particle-less *yes/no* questions with rising intonation; (19b) confirmation-seeking questions with the particle *ba*[6]; (19c) *yes/no* questions with the particle *ma*.

(19a) Zhàoqìng yào qù shòupiàochù ↑
Zhaoqing will go ticket-booth
'Zhaoqing will go to the ticket-booth?'

(19b) Zhàoqìng yào qù shòupiàochù ba?
Zhaoqing will go ticket-booth BA
'Zhaoqing will go to the ticket-booth, won't he?'[7]

(19c) Zhàoqìng yào qù shòupiàochù ma?
Zhaoqing will go ticket-booth FORCE
'Will Zhaoqing go to the ticket-booth?'

For the 23 triplets investigated, they obtain a clear contrast between the particle-less questions and the *yes/no* questions with *ma*. More precisely, the nucleus pitch range in intonation questions is significantly wider than in *ma*-questions. Accordingly, from an acoustic point of view, a *ma*-question cannot be analysed as an intonation question with the SFP *ma* simply added on. This acoustic evidence in combination with the different syntactic constraints holding for intonation questions vs *ma* questions demonstrates that BHR's (2014: 201) scenario does not hold for *ma*: "Conceivably, then, the languages in question have an abstract head in the left periphery encoding question force, triggering question intonation in the languages that have it, which is optionally doubled […] by a final overt particle."

*2.3. The Attitude head* ne

The second "optional" SFP in Mandarin Chinese mentioned by BHR (2014: 200) is *ne*. Note from the very outset that *ne* is a head realizing the speaker/hearer related AttitudeP, not ForceP. Accordingly, *ne* is not a question particle on a par with *ma* (*pace* Lisa L.-S. Cheng 1991), a fact well-documented in the literature (cf. among others Hu Mingyang 1981: 418, Jin

[6] This *ba* is different from the advisative *ba* encoding a softened imperative (cf. (5)).
[7] Naturally, the translation of sentence (19b) as a tag question in English does not imply that *ba* has the syntactic status of a tag in Chinese.

Lixin 1996, Paris 1981: 389, Li and Thompson 1981: 305).[8] In other words, in a *wh*-question, *ne* is not obligatory for the simple reason that this SFP does not encode the interrogative force. However, if one wants to signal the discourse function associated with *ne*, which *inter alia* is to solicit the co-speaker's attention, rendered here by 'listen, and …', *ne* is evidently required (cf. among others Wu Guo 2005, V.-J. Pan 2011):

(20a) Nǐ jīntiān xiǎng qù nǎr?
2SG today want go where
'Where do you want to go today?'

(20b) Nǐ jīntiān xiǎng qù nǎr ne?
2SG today want go where ATT
'Listen, and you, where do you want to go today?'

Furthermore, as is equally well-known, *ne* is not limited to *wh*-questions (*pace* Lisa L.-S. Cheng 1991), but can also be present in A-not-A questions, unlike *ma*:

(21a) Tā míngtiān néng bù néng lái?
3SG tomorrow can NEG can come
'Can he come tomorrow?'

(21b) Tā míngtiān néng bù néng lái ne /*ma?
3SG tomorrow can NEG can come ATT/ FORCE
'Listen, and he, can he come tomorrow?'

In fact, *ne* is also compatible with a non-interrogative complement, which confirms that it is not an interrogative force related typing particle.

(22) Bālí míngtiān yào xià xuě ne!
Paris tomorrow will fall snow ATT
'Imagine, it is going to snow tomorrow in Paris!'

Within the split CP proposed for Chinese by Paul (2014), (TP) < lowCP < ForceP < AttitudeP, *ne* is thus not a force head like *ma*, but realizes the speaker/hearer related projection AttP above ForceP.[9] These discourse particles in AttP are not "optional" either, given that their presence/absence inevitably leads to a different interpretation, as also noted by Biberauer, Haegeman and van Kemenade (2014: 9). *Ne* in (22), for example, is obligatory.

Having established that the SFP *ne* is an Attitude head, not a *wh*-question "typing particle" as claimed by Lisa L.-S.Cheng (1991), it is no longer surprising that *ne* is compatible with declaratives (cf. (22) above) and different types of questions, including rhetorical questions:

[8] Since *ne* is not a *wh*-question typing particle à la Cheng (1991), it does not qualify as an interrogative Force head and can therefore not be analysed as the overt realization of the null operator present in *wh* questions, either (*pace* Aoun and Li 1993). For a critical appraisal of Lisa L.-S. Cheng's (1991) *Clause typing hypothesis* in general, cf. Bruening (2007).

[9] This is not what Paul (2014) says. She analyses *ne* as a force head encoding "follow-up" questions, i.e. questions not asked "out of the blue", while at the same time observing the well-formedness of *wh*-questions and A-not-A questions without *ne.*

(23a) [$_{\text{ForceP}}$[$_{\text{Force°}}$ ¬ ] [$_{\text{TP}}$ Tā nǎr huì shuō hànyǔ]]?!
3SG where can speak Chinese
'In which world can he speak Chinese?!' = 'He cannot speak Chinese at all!'

(23b) [$_{\text{AttP}}$ [$_{\text{ForceP}}$ [$_{\text{Force°}}$ ¬] [$_{\text{TP}}$ Tā nǎr huì shuō hànyǔ]] [$_{\text{Att°}}$ ne]]?!
3SG where can speak Chinese ATT
'Oh, come on, he cannot speak Chinese at all!'

If *ne* were not an Attitude head, but a *wh*-question typing particle, i.e. obligatory for *wh*-in-situ languages, its presence in A-not-A questions (cf. (21b) above) would force us to treat the latter as a type of *wh*-questions as well, clearly an undesired result. In addition, as is well known, the question interpretation obtains in the absence of *ne*, both in A-not-A questions (cf. (21a) above) and *wh*-questions (cf. (24)):

(24a) [$_{\text{ForceP}}$ [$_{\text{Force°}}$ Op] [$_{\text{TP}}$ Nǐ xǐhuān nǎ zuò chéngshì]] ?
2SG like which CL city
'Which city do you like?'

(24b) [$_{\text{AttP}}$ [$_{\text{ForceP}}$ [$_{\text{Force°}}$ Op] [$_{\text{TP}}$ Nǐ xǐhuān nǎ zuò chéngshì]] [$_{\text{Att°}}$ ne]]?
2SG like which CL city ATT
'Listen, which city do you like?'

To summarize, even though the exact semantic contribution of *ne* is difficult to capture, a problem typical of Attitude heads in general, it is evident that *ne* is obligatory if the associated meaning is to be expressed. Against this background, it does not make much sense to talk about "optionality" as a general feature of SFPs, as BHR (2014: 201) do, where SFPs are said to "optionally double" the information encoded by an abstract head which in turn triggers a given intonation. SFPs as merely "doubling" information encoded elsewhere in the sentence is in any case unfeasible as soon as the entire array of SFPs realizing the three different layers is taken into account (cf. section 2.1 above). In addition, as laid out in detail by an anonymous reviewer, this "doubling" analysis can in any case not rescue the FOFC. If the second, "doubling" element, does not constitute some sort of orphaned element or purely phonological add-on, it still represents a problem for the FOFC. This is because *merge* is considered a binary operation, and the "second part" of a "doubled" element would still need to be merged independently of the first. It is therefore not clear how a "discontinuous" element would be able to escape FOFC's logic, given that the FOFC is defined over syntactic mergers - and crucially not over "elements that often appear together" or "elements that are lexically linked in some way".

## 3. An anti-disjunction analysis of *ma*

Having established that the SFPs *ma* and *ne* are not "optional doublers", we now turn to their syntactic analysis. In the literature on Chinese, since Thomas Hun-tak Lee (1986), *ma* has been analysed as a C taking its clausal complement to the left:

(25) [$_{\text{CP}}$ [$_{\text{TP}}$ Tā zài Beǐjīng gōngzuò] ma]?
3SG at Beijing work FORCE
'Does he work in Beijing?'

Given that this widely accepted analysis leads to a FOFC violation (a head-final CP dominating a head-intial TP), BHR (2014: 201) adopt Bailey's (2012/2013) general account of final question particles in VO languages (implemented for Vietnamese in her thesis). "As also discussed by Bailey (2010, 2012), at least some of the apparently FOFC-violating final question particles may actually be initial negative disjunctions of an elided disjunct clause. The structure of these *yes/no* questions would be [Q [TP [OR-NOT ~~TP~~]]], where ellipsis of the second TP, identical with the first TP, leaves the negative disjunction as an apparently clause-final particle (see also Aldridge 2011, Yaisomanang 2012). […] If these [i.e. the apparently FOFC-violating structures with SFPs; VJP & WP] are partially disguised coordinate structures, then there is no FOFC violation […]." In fact, it is not entirely correct to refer to Aldridge (2011) as confirming evidence for the FOFC, as BHR (2014: 201) in the passage just cited do. Aldridge (2011) only postulates the head-initial disjunction structure as input structure for the diachronic reanalysis of the negative existential verb *wu* as an interrogative C *wu* (ultimately resulting in *ma* via phonological changes). By contrast, as output structure <u>after</u> reanalysis she explicitly posits [$_{CP}$ TP $C_Q$ ] (cf. p. 443, (62)) "in which the TP to the left of *wu* is analyzed as its complement, rather than positing a second TP which is later deleted." As noted by Bailey (2012/2013: 305), this head-final CP with a head-initial TP-complement induces a FOFC violation. [10]

As for Bailey (2012/2013: iii, (4)), she herself proposes the structure [$_{ConjP}$ CP [Conj ~~CP~~]], not [Q [TP [OR-NOT ~~TP~~]]], i.e. for Bailey the clausal complement of Conj° elided under identity with that in Spec, ConjP is CP, not TP. However, for both BHR's (2014) and Bailey's (2012/2013) analyses, several problems arise immediately when trying to implement them for Chinese.

First, the conjunction scenario for *ma* completely glosses over the well-known existence of the true disjunctive question with *háishi* 'or' in Chinese (cf. Huang 1982: 275-276, ch.4.3.2; Huang, Li and Li 2009, ch. 7.2):

(26) Nǐ lái wǒ jiā háishì wǒ qù nǐ jiā ?
2 SG come my home or 1 SG go your home
'Will you come to my place or shall I go to your place?'

Importantly, in such a disjunctive question *ma* is completely ungrammatical.

(27a) *Nǐ lái wǒ jiā háishì wǒ qù nǐ jiā ma?
2SG come my home or 1SG go your home FORCE

(27b) *Nǐ lái wǒ jiā ma háishì wǒ qù nǐ jiā ma?
2SG come my home FORCE or 1SG go your home FORCE

This ungrammaticality holds irrespective of whether there is one *ma* per clause or one *ma* for the entire disjunctive structure. Both (27a) and (27b) are excluded because the *yes/no* question force is in conflict with the disjunctive question force. In turn this shows that *yes/no* questions with *ma* and disjunctive questions must be distinguished and cannot be analysed uniformally, as already demonstrated by Huang (1982). As a result, the *yes/no* question with *ma* cannot be derived from a disjunctive structure (also cf. Huang, Li and Li 2009: 242-244).

[10] This seems to be the reason why in the end Bailey (2012/2013: 306) does not apply her own analysis to Chinese *ma*: "If Aldridge (2009) [sic] is correct […], *ma* is not a question particle of the type investigated here [i.e. *ma* cannot be analysed as a conjunction whose complement is elided; VJP & WP]. I leave this discussion aside here."

Furthermore, in addition to the interrogative disjunctor *haishi* 'or', Chinese also has the declarative disjunctor *huòzhě* 'or'.

(28a) Nǐ lái wǒ jiā huòzhě wǒ qù nǐ jiā.
2SG come my home or 1SG go your home
'Either you come to my place or I go to your place.'

(28b) Nǐ lái wǒ jiā háishì wǒ qù nǐ jiā ?
2SG come my home or 1SG go your home
'Will you come to my place or shall I go to your place?'

As illustrated in (28b), with *haishì* instead of *huòzhě*, we automatically obtain a disjunctive question. This is different from English and German where the formation of a disjunctive question not only requires 'or', but also subject-auxiliary inversion. In other words, *háishì* in Chinese involves both a disjunction and an interrogative operator. This is the reason for the incompatibility between a disjunctive question and the *yes/no* question SFP *ma* in (27) above.

Importantly, true disjunctive questions with *haishi* 'or' also demonstrate that the complement clause of a conjunction is not automatically deleted, unlike what Bailey (2012/2013) postulates: [$_{ConjP}$ CP [Conj ~~CP~~]]:[11]

(29a) [$_{ConjP}$ [$_{CP}$ [$_{TP}$ Nǐ qù Bólín] ] háishì [$_{CP}$ nǐ bù qù Bólín$_{\ldots}$]]?
2SG go Berlin or 2SG NEG go Berlin
'Do you go to Berlin or not?'

(29b) *[$_{ConjP}$ [$_{CP}$ [$_{TP}$ Nǐ qù Bólín] ] háishì ~~[$_{CP}$ nǐ bù qù Bólín$_{\ldots}$ ]~~]?
2SG go Berlin or 2SG NEG go Berlin

In order to correctly predict the data in (29a-b), Bailey (2012/2013) would need to establish two different types of "conjunctions": the SFP *ne* would be derived from the conjunction type that always elides its complement, whereas the conjunction *háishì* 'or' would illustrate the conjunction type that always spells out its complement.

However, even granted this stipulation, Bailey's scenario still fails in the case of disjunctions where each conjunct bears a sentence final particle, such as the Attitude head *ne* (a case not considered by Bailey 2012/2013):

(30) Nǐ qù Bólín *ne* háishì wǒ qù Bō'ēn *ne* ?
2SG go Berlin ATT or NEG go Bonn ATT
'Listen, will you go to Berlin or should I go to Bonn?'

As far as we can see, a bottom-to-top derivation of (30) is impossible, because it would crash at the point where the syntactic object (31a) *háishì wǒ qù Bō'ēn ne* 'or should I go to Bonn *ne*' is merged with the topmost *ne* (cf. 31b), given that within Bailey's approach *ne* would be a conjunction that requires the deletion of its complement.

(31a) [$_{ConjP2}$ (*háishì*) [$_{ConjP1}$ CP [$_{Conj1'}$ *ne* <~~CP~~>]]]
(31b) # [$_{Conj3P}$ ConjP2 [$_{Conj3'}$ *ne* ~~[$_{ConjP2}$ (*háishì*) [$_{ConjP1}$ CP $_{Conj1'}$ *ne* <CP>]]~~]]]

[11] Bailey (2012/2013: 305-6) mentions disjunctive questions with *háishì* in passing only and does not give any examples. It is clear that she completely misunderstands Huang, Li and Li's (2009: 242-244) analysis when stating *inter alia* that they equate *háishì* to 'whether' (Bailey 2012/2013: 305).

(31b) excludes the existence of sentences such as (30), contrary to fact.

The only remaining possibility to derive (30) would be to first construct each conjunct (including *ne*) separately and then merge them with *háishì* 'or';

(32) *[$_{Conj2P}$ [$_{Conj3P}$ CP2 [$_{Conj3'}$ *ne* <CP2>]] [$_{Conj2'}$ (*háishì*) [$_{ConjP1}$CP1 [$_{Conj1'}$ *ne* <CP1>]]]]

However, given Bailey's (2012/2013: 284) assumption that "conjunctions may select, but not be selected", her ConjP *wǒ qù Bō'ēn ne* in fact cannot be selected as complement by the conjunction *haishi* 'or', and the derivation crashes again. There is thus no way to correctly account for the structures in (29-30) within Bailey's (2012/2013) approach, and it can therefore not be applied to Chinese.

Based on Bailey (2012/2013), BHR (2014) propose a slightly different scenario for *yes/no* questions, which encounters similar problems to those already outlined above. *Yes/no* question particles such as *ma* are again analyzed as head-initial negative disjunctions [Q [TP [OR-NOT TP]]] with the question force encoded by a higher null interrogative operator. In contrast to Bailey, this negative disjunction selects a TP complement (instead of a CP) which is elided under identity with the first TP. This leaves the negative disjunction as a surface SFP [Q [TP [OR-NOT ~~TP~~]]]. However, like Bailey, BHR (2014) gloss over the existence of the disjunction *háishì* 'or' in Chinese. Accordingly, the status of their "negative disjunction" OR-NOT is not clear. If OR-NOT stands for the sequence *háishì* 'or' + the negation *bù* 'not', *haishi* 'or' and *bù* 'not' will be stranded after the deletion of second TP, leading to the ungrammatical sentence (33a). If OR-NOT stands for a conjunction with negation incorporated, the resulting sentence is ungrammatical as well (cf. 33b).

(33a) *[Q [$_{TP}$ Nǐ qù Bólín] [háishi bù [~~TP~~]]]?
2SG go Berlin OR NOT

(33b) *Nǐ qù Bólín háishi ?
2SG go Berlin OR-NOT

BHR's analysis of *yes/no* question SFPs as disjunctions is crucial for their purpose, insofar as disjunctions, on a par with conjunctions, are considered to be "acategorial", i.e. they do not c-select specific complements and hence do not "count" with respect to the FOFC. This acategorality does, however, not hold in the case of Chinese SFPs which can only c-select TP and CP.

To conclude, an analysis of question particles as negative disjunctions whose complement has been elided, [$_{ConjP}$ CP [Conj ~~CP~~]], is not feasible for Chinese. Accordingly, BHR's (2014: 201-203) characterization of such conjunctions as "acategorial elements", hence not violating the FOFC, cannot be applied to Chinese *ma*.

## 4. Against an antisymmetry approach

Alternatively, can the sentence final position of SFPs *qua* Cs in Chinese be accommodated by an analysis à la Kayne (1994) where a head-final CP is derived from a head-initial CP by raising the complement TP to the specifier? Naturally in the past, there have been proposals deriving SFPs in Mandarin Chinese from an underlying head-initial projection, such as

Sybesma (1999) and Hsieh & Sybesma (2008).[12] Sybesma's (1999) analysis is based on Tsai's (1994) unselective binding approach. Tsai (1994) postulates a null *wh*-operator Op at the sentential level (CP/IP) which scopes over the remaining sentence (including the in-situ *wh*-word). Importantly, he does not postulate raising of the IP to the left of Op.

(34) $[_{CP/IP}$ Op $[_{IP}$….*wh*….]]

However, if we now turn to Sybesma's (1999) implementation of Tsai's original proposal, we see that he complements Tsai's sentence initial operator by a sentence initial overt question SFP *ma*. The IP including the operator Op then raises to the [Spec, CP] headed by *ma*, deriving the correct surface order.

(35) Sybesma's proposal:
$[_{CP}$ Q-*ma* $[_{IP}$ Op $[_{IP}$….wh….]]
→ $[_{CP}$ $[_{IP}$ Op $[_{IP}$….wh….]]$_j$ [Q-*ma* $t_j$]]

This type of proposal encounters several problems, one of which is the general incompatibility between the *wh*-question operator, Op, and the *yes-no* question marker *ma*. It is impossible for two different illocutionary force operators to co-exist in the same sentence, given that the same sentence cannot be simultaneously interpreted as a *yes-no* question and *wh*-question. Nevertheless, Hsieh & Sybesma (2008) maintain Sybesma's (1999) analysis without providing any other motivation than the principled undesirability of mixed head-directionality; according to them, this creates a complex parameter setting and causes problems for language acquisition. This is, however, not borne out by experimental studies. Quite on the contrary, Lee et al. (2005) observe that Chinese SFPs are acquired without any problem before the age of two years, against the background of SVO order. Proposals claiming underlingly head-initial SFPs have so far not been able to adduce any independent empirical evidence and their choice is solely determined by the effort to obtain uniform head-directionality, although the latter has been demonstrated not to be part of grammar (cf. among others Newmeyer 2005, chapter 2 for extensive discussion). If notwithstanding the lack of independent empirical evidence for the antisymmetry approach, one nevertheless tries to

[12] As pointed out by an anomynous reviewer, Cheung (2009) also postulates a head-initial position for SFPs in Cantonese. As acknowledged by Cheung himself, the construction discussed by him exclusively involves the so-called "afterthought construction" or "right dislocation", typical of spontanuous speech:

(i) Hou hongoi lo1, go go sailouzai
very lovely SP Dem Cl kid
'The kid is lovely.' (Cheung 2009: 200, (4))

Note immediately that Cheung's own translation completely glosses over the syntactic and semantic particularities of the afterthought construction in (i) and presents it as though illustrating the canonical word order 'S VP'. In fact, the literal equivalent of (i) in English is 'Is lovely, that kid.' In the derivation proposed by Cheung for this sentence type, the SFP *lo1* realizes a head-initial $C^0$ taking IP as its complement; IP itself is composed of two parts [α β]:

(ii) a. $[_{CP}$ $C^0$-SFP $[_{IP}$ α β]] → $[_{FocusP}$ $\beta_i$ $[_{CP}$ $C^0$-SFP $[_{IP}$ α $t_i$]]]
b. $[_{FocusP}$ [ Hou hongoi lo1]$_i$ $[_{CP}$ $C^0$-*lo1* $[_{IP}$ go go sailouzai $t_i$ ]]]
very lovely SP Dem Cl kid

Leaving aside that in all of his examples only β moves, but never α, notwithstanding its greater proximity to C, the fundamental problem with the scenario in (ii) is that β and C do not form a constituent. This goes against all the existing studies of the afterthought construction since Chao (1968) and Lu (1980), who all agree on the constituent status of the first part including the SFP when present, and the existence of an intonational break (indicated by the comma) before the afterthought part. For an analysis of the afterthought construction in Mandarin as involving (right) adjunction to the matrix sentence (TP or CP), cf. Gasde & Paul (1996), Paul (2014) and references therein.

derive SFPs from an underlyingly head-initial position, technical difficulties arise. For example, as pointed out by Bayer (1999, section 3) (also cf. Abels and Neeleman 2012), it remains entirely stipulative that it is the entire TP that must move in order to check the movement triggering feature of C, for such a feature could very well be checked by moving a subconstituent of TP, e.g. the object or the subject. This requirement also runs counter the generally observed non-movability of TP to the left (including local movement). Bayer (1999: 250) therefore concludes that head-final Cs should not be analysed as attractors of TP and that head-final CPs are indeed merged as such. This is also the stand expressed by an anonymous reviewer who points to the very few empirical advantages to be gained from an antisymmetric analysis of Chinese SFPs; its sole *raison d'être* seems to be to rescue the FOFC.

## 5. Conclusion

This article has argued that the Chinese SFPs *ma* and *ne* are Cs in a head-final CP. They cannot be derived from a disjunction structure with the SFPs heading a head-initial ConjP whose complement has been elided under identity with the clausal projection in Spec,ConjP. Given the large array of semantically very diverse SFPs the majority of which are not related to interrogative Force, such a disjunction account is in any case not feasible for all SFPs. A Kaynean raising analysis of TP to [Spec, CP], though technically feasible, does not seem to be backed up by any independent empirical evidence. As a result, the surface sentence-final position of SFPs in Chinese must be taken at face value. Whether this likewise holds for other VO languages with SFPs such as Vietnamese and what consequences arise from the existence of head-final CPs in VO languages for typology are challenging issues for future research.

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