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What you see is what you get: Chinese sentence-final particles as head-final complementizers

The present article presents an in-depth analysis of the head-final three-layered split CP realized by sentence-final particles (SFPs) in the SVO language Mandarin Chinese. These SFPs are shown to be fully-fledged functional heads with a complex feature make-up, on a par with C elements in e.g. Indo-European languages. Chinese SFPs select and project, as evidenced by the strict hierarchy for co-occurring SFPs in the split CP. This structure must be merged as such and cannot be derived by postulating movement from a head-initial CP. It straightforwardly invalidates empirically superficial statements that attempt to turn Chinese SFPs into a grammatical *quantité négligeable* in order to uphold problematic word order generalizations such as the Final-over-Final Constraint.

1 Introduction

In Chinese, *zhùcí* 'particle' has been used as a cover term for (mostly, but not exclusively monosyllabic) items whose categorial status is unclear. However, already in the 1980s, Zhu Dexi (1982) identified *sentence-final particles* (SFP) (*yǔqì zhùcí* 'mood particles') as a closed set of items, which he characterized as combining with the sentence as a whole and constituting three distributional classes. He obtained these classes by determining the paradigmatic and syntagmatic relations among SFPs: mutually exclusive SFPs were assigned to the same class, while co-occurring SFPs were assigned to different classes in terms of their strict ordering restrictions. Zhu Dexi's (1982) three-partite division can

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be easily recast into a split CP à la Rizzi (1997, 2004), *modulo* the addition of an additional speaker/hearer-related projection (Attitude Phrase) above Rizzi's ForceP. As in the languages examined by Rizzi (1997, 2004), the strict relative order observed in the Chinese split CP results from the fixed hierarchy among its subprojections.

The present article presents an in-depth analysis of the three-layered split CP realized by SFPs in Mandarin Chinese. It provides extensive evidence for their status as projecting and selecting C-heads, on a par with the C-heads in e.g. Romance and Germanic languages. This straightforwardly invalidates the various recurring statements by Biberauer, Holmberg, and Roberts (2007, 2008, 2010, 2014) – based on a superficial discussion of the two Chinese SFPs *ma* and *ne* – that SFPs are basically "acategorial" and therefore a *quantité négligeable* that does not "count" for grammar.

The organization of the article is as follows. Section 2 introduces the basic structure of the split CP in Chinese. Section 3 corrects some of the major misconceptions commonly encountered in the literature, among them the alleged optionality of SFPs. Section 4 begins with an examination of the "innermost" SFPs nearest to TP, labelled Low C here. Even though the SFPs realizing Low C are often described as tense/aspect-related, they are clearly located above TP. Section 5 turns to the second-highest level, i.e. ForceP. Section 6 discusses the topmost level, *viz.* the speaker/hearer-related AttitudeP. As in other languages, the exact semantic contribution of these SFPs is the most difficult to describe. Section 7 illustrates the strict order for co-occurring SFPs and shows it to reflect the hierarchy of the respective layers. Importantly, the resulting split CP is observed in root-contexts only. Section 8 examines the issue of SFPs from a typological perspective and invalidates current proposals claiming the non-existence of head-final CPs in VO languages. Section 9 concludes the article.

2 The three-layered split CP in Mandarin Chinese

Extending Lee Hun-tak's (1986) analysis of the *yes/no* question SFP *ma* as C to all SFPs, Paul (2008, 2014, 2015) established a three-layered CP for Chinese: Low C < Force < Attitude. This split CP replicates Zhu Dexi's (1982: 207–213) division of the SFPs into three distributional classes, based on their rigid relative ordering. As to be argued for in this article, this split CP needs to be refined insofar as Low CP and AttitudeP can be further divided into two subprojections.

(1) *The three layers in the split root CP*

C1 (Low C)		C2 (Force)	C3 (Attitude)
le currently relevant state	*éryǐ* 'only'	ba_{Imp} (advisative *ba*)	*a* softening
láizhe recent past		$ba_{Qconfirmation}$	*ei* gentle reminder
		ma yes/no question	*ou* impatience, surprise
			ma dogmatic assertion
			zhene intensifier ....
			ne_3 exaggeration *ba* probability

(N.B. The semantic values indicated for each SFP can give a rough approximation only.)

The first class of SFPs (corresponding to our Low C) occurs nearest to the sentence (TP) and is claimed to express "tense" by Zhu Dexi (1982: 9); it comprises SFPs such as *le* and *láizhe,* cf. (2)–(3) below. The SFP *éryǐ* (not discussed by Zhu Dexi [1982]) also belongs to Low CP, but in a subprojection higher than the one hosting *láizhe* and *le* (cf. Section 3 below). The SFPs of the second class (Force) convey notions such as *yes/no* question (*ma*), confirmation-seeking question (ba_{Qconf}) and imperative (ba_{Imp}), cf. (4) below. The third, "outermost" class of SFPs (Attitude), finally, is explicitly stated to be different from the two other classes, because it involves the speaker's attitude or feelings; SFPs belonging to this class are e.g. *a*, *ei* etc., cf. (5) below. Zhu Dexi (1982: 208) emphasizes that co-occurring SFPs belong to hierarchically different levels. SFPs of the same class are mutually exclusive, such as e.g. *le* and *láizhe*, which both belong to the innermost class, cf. (3) below.

(2) *Tā   gāngcái   hái   zài   bàngōngshì   láizhe.*[1]
    3SG   just.now   still   at   office   LowC
    'He was in his office just now.'

(3) *Zuótiān   xià   yǔ   le   / láizhe*
    yesterday   fall   rain   LowC   / LowC
    / { le   láizhe /*láizhe   le }.*
    LowC   LowC/ LowC   LowC
    'It rained yesterday.'

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1 The following abbreviations are used in glossing examples: CLF = classifier; EXP = experiential aspect; NEG = negation; PL = plural; PRF = perfective aspect; PROG = progressive aspect; SG = singular; SUB = subordinator; 1/2/3 = 1st/2nd/3rd person.

(4) a. *Nǐ   míngnián   qù   Běijīng   ma?*
      2SG   next.year   go   Beijing   FORCE
      'Will you go to Beijing next year?'

   b. *Nǐ   jīntiān   xiàwǔ   zài   lái   ba.*
      2SG   today   afternoon   again   come   FORCE
      'Please come again this afternoon.'

(5) [$_{CP}$ [$_{TP}$ *Jīntiān   xīngqīsān   ei!   Nǐ   bié   wàngle*
              today   Wednesday   ATT   2SG   NEG   forget
              xiàwǔ   děi   shàng   kè]   *ei!*]
              afternoon   must   attend   class   ATT
   'Today is Wednesday (mind you)! Don't forget you have classes in the
    afternoon!'
   (slightly changed example from Zhu Dexi 1982: 213)

The highest layer established for Mandarin Chinese, AttitudeP, is absent from Rizzi's (1997, 2004) original hierarchy, but is attested in other languages as well (cf. among others Munaro and Poletto [2006] for discourse-related SFPs in the Italian dialects Pagotto and Veneto, and Haegeman's [2014] DiscourseP postulated for West-Flemish). In Mandarin Chinese, the Attitude head *ei* e.g. indicates that the speaker assumes the co-speaker to be up to date concerning the matter at hand, but nevertheless issues a reminder. This is reminiscent of German *ja* and *doch* as well as the particle *to* in Bangla and Hindi.[2] As already observed by Zhu Dexi (1982), the SFPs realizing Low C (as "innermost" SFPs) are sensitive to the properties of the TP-internal predicate (cf. Section 3 below for further discussion) and in that respect are comparable to Rizzi's FiniteP, which entertains a close relationship with the [± finite] nature of the extended verbal projection within TP. Given the controversial nature of the [± finite] distinction in Chinese, the more neutral label "Low C" has been chosen for this layer.

3 Against the so-called optionality of SFPs

As will become clear in the remainder of this article, whenever one intends to express the meaning encoded by a given SFP, this SFP is obligatory. For example, the "optionality" of the *yes/no* question Force head *ma* only exists insofar as a sentence remains acceptable without it, *modulo* the associated interpretational difference between a declarative and an interrogative sentence. The same observation

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2 Sentence (5) can be roughly translated into German as follows: *Heute ist doch Mittwoch! Vergiss ja nicht, dass du heute nachmittag zum Unterricht musst!*

holds for all SFPs in any given language, including those realizing AttitudeP. As pointed out by Biberauer, Haegeman, and van Kemenade (2014: 9) it is misleading to characterize discourse particles as "optional", given that the absence of such a particle inevitably leads to a different interpretation. Accordingly, it does not make much sense to talk about "optionality" as a general feature of SFPs, as Biberauer, Holmberg, and Roberts (2014: 200) do: "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*)." [emphasis ours, W.P., V.J.P.].[3] Importantly, the alleged optionality of *ne* and *ma* is precisely *not* true, as well-known by everybody working on Chinese.

This is not meant to gloss over *yes/no* questions formed by a rising intonation alone (6c) (cf. Lu Jianming 1985: 236; Pan Victor Junnan 2011: 67), which do exist in Chinese, in addition to *yes/no* questions formed by adding the *yes/no* question SFP *ma* to a declarative sentence, cf. (6a)–(6b).

(6) a. *Tā   huì   shuō   bāfálìyàyǔ.*
       3SG   can   speak   Bavarian
       'He can speak Bavarian.'
    b. *Tā   huì   shuō   bāfálìyàyǔ   ma?*
       3SG   can   speak   Bavarian   FORCE
       'Can he can speak Bavarian?'
    c. *Tā   huì   shuō   bāfálìyàyǔ ↑?*
       3SG   can   speak   Bavarian
       'Can he speak Bavarian?'

However, in many syntactic contexts the option of using intonation to encode a 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.

(7) *Nǐ   zài   Sītújiātè   jiāo   shū,   bù   shì   *(ma)?*
     2SG   at   Stuttgart   teach   book   not   be   FORCE
     'You teach in Stuttgart, don't you?'

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3 While Biberauer, Holmberg, and Roberts (2014) refer to Bailey's doctoral dissertation as Bailey (2012), elsewhere it 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 Biberauer, Holmberg, and Roberts (2014). Note that Bailey's (2012/2013) starting point is that SFPs in VO languages such as Chinese only superficially violate the Final-over-Final Constraint postulated in Biberauer, Holmberg, and Roberts (2010, 2014). Cf. Section 5 below for further discussion.

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: Ch. 5):

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

(9) a. *Tā   pà   shéi   huì   dǎ   tā ↑?*
      3SG   fear   who   will   beat   3SG
      'Who does he fear will beat him?'
   b. *Tā   pà   shéi   huì   dǎ   tā   ma?*
      3SG   fear   who   will   beat   3SG   FORCE
      'Does he fear that someone will beat him?'

In this respect, Chinese is on a par with English and many other languages, 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". Negative Polarity Items, for example, are licensed in SAI only, not in *yes/no* questions formed by rising intonation:

(10) a. **You saw anyone ↑?*
    b. *Did you see anyone?*

Furthermore, as in Chinese, in English as well tag questions cannot be formed by a rising intonation, but require SAI instead:

(11) *You teach in Stuttgart, don't you / *you don't ↑?*

Concerning the second allegedly optional SFP mentioned by Biberauer, Holmberg, and Roberts (2014: 200), i.e. *ne*, note first of all that it is *not* a question particle on a par with *ma* (*pace* Lisa Lai-Shen Cheng 1991), a fact again well-documented in the literature (cf. Hu Mingyang 1981: 418; Paris 1981: 389; Li and Thompson 1981: 305; Lin William C. 1984: 220, among others).[4] In other words, in a *wh* question,

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4 Given that *ne* is *not* a *wh*-question typing particle à la Lisa Lai-Shen 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 (*contra* Aoun and Li [1993]). For a critical appraisal of Lisa Lai-Shen Cheng's (1991) *Clause typing hypothesis* in general, cf. Bruening (2007).

cf. (12), or in an A-*not*-A polar question (formed by the juxtaposition of the predicate in its positive and negative form; cf. [13]), the Attitude head *ne* is not obligatory, for the simple reason that *ne* 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 you...", *ne* is evidently obligatory (cf. Wu Guo 2005; Li Boya 2006; Victor Junnan Pan 2007, 2011, among others):

(12) a. *Nǐ   zuì   xǐhuān   hē   nǎ*
        2SG   most   like   drink   which
        ge   páizi   de   déguó   píjiǔ?
        CLF   brand   SUB   German   beer
        'Which brand of German beer do you like most?'
     b. *Nǐ   zuì   xǐhuān   hē   nǎ*
        2SG   most   like   drink   which
        ge   páizi   de   déguó   píjiǔ   ne?
        CLF   brand   SUB   German   beer   ATT
        'Listen, and you, which brand of German beer do you like most?'

(13) a. *Tā   huì   bù   huì   shuō   bāfálìyàyǔ?*
        3SG   can   NEG   can   speak   Bavarian
        'Can he speak Bavarian?'
        Tā   huì   bù   huì   shuō   bāfálìyàyǔ   ne?
        3SG   can   NEG   can   speak   Bavarian   ATT
        'And he, can he speak Bavarian?'

Being a head realizing AttitudeP, *ne* can also select a non-interrogative complement (cf. Section 6 below for further discussion):

(14) *Déguó   yǔyánxuéjiā   kě   duō   *(ne)!*
     German   linguist   really   many   ATT
     'There really are a lot of German linguists!'

As indicated, *ne* is obligatory in the presence of the speaker-oriented emphatic adverb *kě* 'really'.

Finally, to round off this discussion of the alleged optionality of SFPs, the Low C *le* is often required in order to syntactically "close off" a sentence (in the absence of any clearly definable meaning associated with it), the sentence in question simply being unacceptable without it. This is another well-known and broadly documented fact, as evidenced by e.g. the sixty pages in Li and Thompson (1981) devoted to the SFP *le* alone (also cf. Section 4 below).

(15) *Wǒ   tài   kāixīn   *(le)!*[5]
    1SG   too   happy   LowC
    'I'm too happy!'

To sum up, the alleged "optionality" of SFPs invoked by Biberauer, Holmberg, and Roberts (2014) is not only incorrect for *ne* and *ma*, but for SFPs in Chinese in general, as to be amply documented in the remainder of this article. In order for the associated semantics to be encoded, the SFP must evidently be present.

4 Low CP

The SFPs realizing Low C can be further divided into two classes, viz. *láizhe* and *le*, on the one hand, and *éryǐ* 'only', on the other. As already stated above, *le* and *láizhe* as the "innermost" SFPs are sensitive to the properties of the sentence-internal extended verbal projection (e.g. aktionsart of the verb, type of negation etc.). Zhu Dexi (1982: 208) grasped this dependence of Low C on TP-internal material by characterizing them as "tense-related" and illustrated this in the minimal pair below:

(16) [$_{\text{LowCP}}$ [$_{\text{TP}}$ *Xià   yǔ*]   *le*].[6]
              fall   rain   LowC
    '(Look), it's raining.' (Zhu Dexi's comment: It didn't rain before.)
    (Zhu Dexi 1982: 209)

(17) [$_{\text{LowCP}}$ [$_{\text{TP}}$ *Xià   yǔ*]   *láizhe*].
              fall   rain   LowC
    'It was raining just now.' (Zhu Dexi's comment: It just rained.)
    (Zhu Dexi 1982: 209)

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5 The Low C *le* in sentences such as (15) is obligatory, whereas it is unacceptable in (i). This pair with nearly identical lexical material provides additional evidence to show that the absence/presence of *le* is constrained by syntax, not by prosody. Thanks to a reviewer for asking us to be more precise on this point.
(i) *Wǒ   hěn   kāixīn   (*le)!*
    1SG   very   happy   LowC
    'I am happy!'
6 Note that there is the homophonous perfective aspect verb suffix -*le* to be distinguished from the Low C *le*.
(i) [$_{\text{LowCP}}$ [$_{\text{TP}}$ *Jīntiān   xià-le   dà   yǔ*]   *le*].
             today   fall-PRF   big   rain   LowC
    '(Look), it has heavily rained today!'

On the basis of these examples, Zhu Dexi (1982: 209) proposed the following interpretative values: *láizhe* indicates that the event has occurred in the recent past, *le* signals that the situation at hand is (conceived of as) new. Naturally, this characterization is not meant to postulate *tense* as a verbal category for Chinese. It rather attempts to capture the semantic import of the SFP, which is also reflected in the constraints imposed on the complement type (TP or CP-subprojection) each SFP can select, to be examined in detail in the following sections. Since the description of *le* as signaling a new situation is not appropriate to cover all cases, we adopt Li and Thompson's (1981: 240) more general characterization of the Low C *le* as indicating "currently relevant state".

Though "tense-related", Low C are clearly in the left periphery above TP, not at the *v*P edge within TP (*contra* Tang Sze-Wing [1998: 42, 51], among others, who locates Low Cs in the Tense head, with subsequent movement of T^0 to C and of the TP-remnant to Spec, Low CP). As evidenced by the interpretation of sentence (18), the negation *mei* 'have not' inside TP only scopes over the *v*P, whence the indefinite reading for *shénme* 'what'. It does not scope over *láizhe*; instead, it is *láizhe* that takes wide scope over the entire TP-complement. The same holds for *le* in (19), which relates the proposition ('not going to Paris') to the speech moment and signals that it does no longer hold.

(18) [$_{\text{LowCP}}$[$_{\text{TP}}$ *Wǒ   gānggāng   méi   zuò   shénme*] [$_{\text{LowC}}$ *láizhe*]].
      1SG   just.now   NEG   do   what   LowC
   'Just now, I didn't do anything.'   (RECENT.PAST>¬)
   NOT: 'It is not the case that [I did anything just now].'   (# ¬>RECENT.PAST)

(19) [$_{\text{LowCP}}$[$_{\text{TP}}$ *Tā*   [*méi*   [*qù*   *Bālí*]] [$_{\text{LowC}}$ *le*]]
      3SG   NEG   go   Paris   LowC
   'He doesn't go to Paris anymore.'   (LE > ¬)
    NOT: 'He hasn't been to Paris .'   (# ¬> LE)

The position of *le* above TP is also confirmed by (20b). Here *le* signals that previously, unlike the situation this year, he worked during minor holidays only and did take a few days off for Christmas. This is made explicit by the acceptability of *kāishǐ* 'start' in (20b), and its unacceptability in (20a):

(20) a. *Tā*   *jīnnián*   *lián*   *shèngdànjiē*
         3SG   this.year   even   Christmas
         dōu   (**kāishǐ*)   *bù*   *fàng*   *jià*.
         all   start   NEG   take   holiday
         'He doesn't even take holidays on Christmas this year.'

b. *Tā   jīnnián   lián   shèngdànjiē   dōu*
   3SG   this.year   even   Christmas   all
   (kāishǐ)   bù   fàng   jià   le.
   start   NEG   take   holiday   LowC
   'He doesn't even take holidays on Christmas (starting from) this year.'

Besides these data clearly showing the position of the Low C above TP, there are also principled objections against locating Low C in T^0 (and stipulating obligatory T-to-C movement). Given that Chinese lacks *v*-to-T movement (Huang C.-T. James 1994), it is rather *ad hoc* to postulate obligatory T-to-C movement; moreover, it must be excluded that after the verb has raised to Asp^0, cf. (21a), it further moves on to T^0, picks up the SFP and raises as a complex head to C itself, cf. (21b):

(21) a. $[_{TP}$ *Tā   yǐjīng* $[_{AspP} [_{Asp°}$ *qù-guò*$]$ $[_{vP} t_{qu}$ *déguó*$]]]$ *le.*
       3SG   already   go-EXP   Germany   LowC
     'He has been to Germany before.'
   b. *$[_{LowCP} [_{TP}$ *tā   yǐjīng* $[_{AspP} [_{Asp°}$ *qù-guò*$]$ $[_{vP} t_{qu}$ *déguó* $]]]$ $[_{C°}$ *qù-guò-le*$]]$.
       3SG already   go-EXP   Germany   go-EXP-LowC

In any case, as soon as one takes into account the Low C *éryǐ*, which can roughly be translated as 'only; this is all I have to contribute' and which is clearly not "tense-related", the location of Low C in Tense is completely implausible.

(22) $[_{LowCP} [_{TP}$ *Wǒ   zhǐbúguò   shuō   shuo*$]$ *éryǐ*$]$.
       1SG   merely   say   say   LowC
   'I'm just talking. (Don't take me serious.)'

More precisely, as illustrated in the table in (1) above, *éryǐ* is located in the subprojection of Low CP that is higher than the one hosting *le* and *láizhe*, as evidenced by their co-occurrence in the order '{*le/láizhe*}+ *éryǐ*'(the opposite order being excluded).

(23) $[_{LowC2P} [_{LowC1P} [_{TP}$ *Tāmen gāngcái   zhǐbúguò chǎo   jià*$]$ $[_{LowC1}$ *láizhe*$]]$ $[_{LowC2}$ *éryǐ*$]]$.
              3PL   just.now   merely   quarrel   fight   LowC1   LowC2
   'They were only quarrelling right now (not fighting.), that's all.'

While Low Cs clearly occupy a TP-external position in the left periphery, there is nevertheless an interaction with TP-internal material including temporal adverbs such as *gāngcái* 'just now':

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

There is a conflict between *gāngcái* 'just now, a moment ago' and *le*. *Gāngcái* explicitly locates the event in the past, whereas *le* relates the very same event to the speech time. However, this is not the case for *láizhe*, which does not establish such a relation.

5 ForceP

The particles typing the clause belong to ForceP: *yes/no* question *ma*, confirmation seeking question *ba*$_{Qconf}$ and imperative *ba*$_{imp}$. Note that a Force head not only *can*, but *must* determine the nature of the resulting sentence in terms of its respective clause typing features.

The presence of *ma* is obligatory for question formation, on a par with SAI in English, *modulo* the constrained possibility of forming questions by rising intonation discussed in Section 3 above.[7]

(25) a. [$_{TP}$ *Nǐ*   *shì*   *déguórén*].
             2SG   be   German
         'You are German.'
     b. [$_{ForceP}$ [$_{TP}$ *Nǐ*   *shì*   *déguórén*] [$_{Force°}$ **(ma)*]]?
                       2SG   be   German   FORCE
         'Are you German?'

As illustrated in (26), the confirmation seeking Force head *ba* neatly contrasts with the *yes/no* Force head *ma*, as evidenced by the different answering possibilities.

(26) a. [$_{ForceP}$ [$_{TP}$ *Nǐ*   *shì*   *déguórén*] [$_{Force°}$ *ba*$_{Qconf}$]]?
                       2SG   be   German   FORCE
         'You are German, aren't you?'
     b. *Nǐ*   *shì*   *zěnme*   *zhīdào*   *de*?
         2SG   be   how   know   DE
         'How come you know that?'

Importantly, (26b) would be completely infelicitous as answer for the *yes/no* question with *ma* in (25b).

Contrary to the information seeking question Force head *ma*, *ba*$_{Qconf}$ is compatible with adverbs of the type *dàgài* 'probably'. Note that without *ba*, (27) would be a declarative sentence.

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7 As illustrated in (13) above, polar questions can also be in the form of A-*not*-A questions. For the numerous differences between the latter and the *yes/no* question with *ma*, cf. Hagstrom (2005).

(27) [$_{ForceP}$ [$_{TP}$ *Nǐ* <u>*dàgài*</u> *shì* *déguórén*] [$_{Force°}$ *ba$_{Qconf}$*/*ma*]]?
　　　　2SG　probably　be　German　　FORCE /FORCE
　　'You probably are German, aren't you?'

The data above nicely confirm the contrast between these two types of question SFPs and highlight the different constraints at work for each SFP.

The SFP *ba$_{IMP}$*, homophonous with the confirmation seeking question SFP *ba$_{Qconf}$*, is called "advisative" by Chao Yuen Ren (1968: 807) because of its "softening" effect. Accordingly, an imperative containing *ba$_{IMP}$* is understood as less harsh an order than the corresponding imperative sentence without *ba$_{IMP}$* (also cf. Hu Mingyang 1981: 416):

(28) [$_{ForceP}$ [$_{TP}$ *Qù* *Kāngsītǎncí* *niàn* *shū*] [$_{Force°}$ *ba*]]*!
　　　　go　Konstanz　study　book　　FORCE
　　'Go study in Konstanz!'

(29) *Kuài* *diǎnr* *zǒu* *ba!*
　　quick　a.bit　go　FORCE
　　'Better hurry up and go!'
　　(Chao Yuen Ren 1968: 807)

(30) *Bié* *chàng* {*le* *ba* } / {**ba* *le*}*!*
　　NEG　sing　LowC　FORCE / FORCE　LowC
　　'Better stop singing.'
　　(Hu Mingyang 1981: 416)

Note the rigid ordering between the Low C *le* and the Force head *ba$_{IMP}$*, illustrating the hierarchy 'LowCP < ForceP'.

Let us return now to the *yes/no* question Force head *ma*. Its analysis as Force head in a head-final CP dominating a head-initial TP and a likewise head-initial extended verbal projection challenges Biberauer, Holmberg, and Roberts' (2014, and earlier versions) *Final-over-Final Constraint* (FOFC), which excludes the structure where a head-final XP immediately dominates a head-initial YP. (This echoes Dryer's [1992, 2009] "near-absolute" universal that SFPs are excluded from VO languages such as Chinese.) In their attempt to maintain the FOFC notwithstanding languages such as Chinese, Biberauer, Holmberg, and Roberts (2014: 200–201) implement Bailey's (2012/2013) analysis which they summarize as follows:

> […] 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. (Biberauer, Holmberg, and Roberts 2014: 200–201).[8]

However, putting aside the initial motivation for Bailey's analysis, *viz.* to save the FOFC, several problems arise immediately.

First, in her attempt to defend the conjunction scenario for *ma*, Bailey (2012/2013) glosses over the existence of true disjunctive questions with *háishi* 'or' in Chinese, where the second TP can never be elided (whether it is identical with the first TP or not), "stranding" *háishì* with or without *bù*:

(31) a. *Míngtiān   tā   lái   wǒ   jiā   háishì   (tā)   bù   lái*
       tomorrow   3SG   come   my   home   or   3SG   NEG   come
       *wǒ   jiā /   *háishì   (bù)?*
       my   home /   or   NEG
       'Will he come to my place or will he not come to my place tomorrow?'
    b. *Míngtiān   nǐ   lái   wǒ   jiā   háishì   wǒ   qù   nǐ   jiā?*
       tomorrow   2SG   come   my   home   or   1SG   go   your   home
       'Will you come to my place or shall I go to your place tomorrow?'

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

(32) a. **Nǐ   lái   wǒ   jiā   háishì   wǒ   qù   nǐ   jiā   ma*
       2SG   come   my   home   or   1SG   go   your   home   FORCE
    b. **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 (32a) and (32b) are excluded because the *yes/no* question force is in conflict with the disjunctive question force inherent in *háishì* 'or' (cf. the discussion immediately below). In turn, this shows that *yes/no* questions with *ma* and disjunctive questions must be distinguished and cannot be analysed uniformly (cf. C.T. James Huang 1982; Huang, Li, and Li 2009). As a result, the *yes/no* question with *ma* cannot be derived from a disjunctive structure as postulated by Bailey (2012/2013).

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8 As indicated by the position of the Q-operator in the structure [Q [TP [OR-NOT TP]]], the Force head is assumed to take a disjunction of two TPs as complement. As we will show below, cf. (34), this is not the case in Chinese. By contrast, it is the disjunctive operator *háishi* 'or' itself that scopes over the respective propositions.

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

(33) a. *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.'

    b. *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 (33b), with *háishì* 'or' instead of *huòzhě* 'or' 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 in addition requires SAI. 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* observed in (32) above.

    Finally, Bailey's (2012/2013) conjunction scenario fails completely in the case of disjunctions where each conjunct bears a sentence final particle, such as the Attitude head *ne* (discussed in detail in Section 6 below). Also note that the very presence of *háishì* 'or' itself is surprising in her account, given that the SFPs themselves are considered to be disjunctors.

(34) *Nǐ   qù   Bólín   ne   háishì   bù   qù   Bólín   ne?*
    2SG go Berlin ATT or NEG go Berlin ATT
    'Listen, will you go to Berlin or not?'

Bailey (2012/2013) would have to postulate an underlying disjunction per SFP *ne* in order to account for its presence on each clause in a disjunction. She also wrongly predicts the acceptability of (35) where *háishì* 'or' – with or without *bù* 'not' – is "stranded" after deletion of the second TP conjunct:

(35) **Nǐ   qù   Bólín   ne   háishì   (bù)?*
    2SG go Berlin ATT or NEG

In addition, the status of the "negative disjunction" OR-NOT in the structure [Q [TP [OR-NOT TP]]] is not clear. If it stands for a conjunction followed by negation after the deletion of the TP, *háishì* 'or' and *bù* 'not' will be stranded, which leads to the ungrammaticality of the sentence, cf. (35); if OR-NOT stands for a conjunction with negation incorporated, which seems to be taken to correspond to the semantics of the *yes/no* question Force head *ma*, the sentence is ungrammatical as well, cf. (36).

(36) *Nǐ   qù   Bólín   ne   háishi / ma?
    2SG   go   Berlin   ATT   or /   FORCE

As already mentioned in the discussion of examples (12)–(14) above, the SFP *ne* is not a *wh*-question "typing particle" à la Lisa Lai-Shen Cheng (1991). Instead, *ne* is an Attitude head; it can select different types of questions, such as disjunctive questions, cf. (34) above, polar A-*bù*-A questions, cf. (37), rhetorical questions, cf. (39), as well as declaratives (cf. Section 6 immediately below).[9]

(37) a. [$_{\text{ForceP}}$ [$_{\text{TP}}$ Nǐ   qù   bú   qù   Fǎlánkèfú]]?
             2SG   go   NEG   go   Frankfurt
    'Do you go to Frankfurt or not?'
    b. [$_{\text{AttP}}$ [$_{\text{TP}}$ Nǐ   qù   bú   qù   Fǎlánkèfú] [$_{\text{Att°}}$ ne]]?
              2SG   go   NEG   go   Frankfurt   ATT
    'Listen, do you go to Frankfurt or not?'

If *ne* were a *wh*-question typing particle in the sense of Cheng Lisa Lai-Shen (1991), i.e. obligatory for *wh*-in-situ languages, its presence in polar A-*bù*-A questions 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 polar A-*bù*-A questions, cf. (37a), and *wh* questions, cf. (38a):

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

The discourse-related semantics associated with *ne* can approximately be rendered by 'listen, look'. Its alleged "clause typing" function is also invalidated by its compatibility with rhetorical questions, which are standardly

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9 Interestingly enough, Petrova (2017) observes and corrects a similar misanalysis for the Old High German particles *inu* and *ia*. These are in general considered to encode interrogative force, notwithstanding their occurrence in declarative sentences and their optionality in *yes/no* questions and *wh* questions. In fact, already in Old High German question formation involved verb fronting and *wh* fronting.

assumed to have a null negative operator as the head of ForceP (cf. Han and Siegel 1996).

(39) a. [$_{ForceP}$ [$_{Force°}$ ¬] [$_{TP}$ *Tā*   *năr*   *huì*   *shuō*   *déyŭ*]]*?!*
                     3SG   where   can   speak   German
    'In which world can he speak German?!' = 'He cannot speak German at all!'

   b. [$_{AttP}$ [$_{ForceP}$ [$_{Force°}$ ¬] [$_{TP}$ *Tā*   *năr*   *huì*   *shuō*   *déyŭ*]] [$_{Att°}$ *ne*]]*?!*
                        3SG   where   can   speak   German   ATT
    'Oh, come on, he cannot speak German at all!'

Even though the exact semantic contribution of *ne* is difficult to capture, a problem typical of Attitude heads (cf. Section 6 immediately below), it is evident that *ne* is obligatory if the associated meaning is to be expressed.

6 AttitudeP

The SFPs realizing AttitudeP involve the speaker/hearer's point of view and subjective judgements; this type of SFP is very widespread across language families. As illustrated in the examples below, the exact meaning of the SFPs in AttitudeP is difficult to pin down and strongly depends on the intonation and the context. This is typical of particles relating to the discourse, as *inter alia* observed for the SFPs in the dialects Pagotto and Veneto from the North-Eastern area of Italy (cf. Munaro and Poletto 2006) and in West-Flemish (cf. Haegeman 2014). In this respect, Chinese is not "exotic" at all (*pace* Biberauer and Sheehan [2011: 391]), but clearly patterns with other well-studied languages.[10] Accordingly, the characteristics of SFPs realizing DiscourseP (the equivalent of AttitudeP) established by Haegeman and Hill (2013) also hold for Attitude SFPs in Chinese. First, AttitudeP does not concern nor affect the truth value of the proposition at hand. This contrasts with the SFPs instantiating ForceP, where as we have seen, *ba*$_{Qconfirmation}$ conveys the speaker's belief that the proposition is true, and *ma* is a request as to the truth value (*yes/no*) of the proposition. Attitude SFPs are thus fundamentally distinct from both

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10 "[…] Cantonese and Mandarin have an exotic range of sentence-final discourse-particles (SFP) that can be combined to express subtly nuanced (and notoriously difficult to translate) meanings […]" (Biberauer and Sheehan 2011: 391).

Low C and Force heads, an observation already made by Zhu Dexi (1982: 208), although not elaborated upon. Second, Attitude SFPs indicate the speaker's commitment to the sentence content; they are interactional and imply the obligatory presence of a hearer. Third, Attitude SFPs are deictic, i.e. they are directly correlated with the speech act, but do not require a preceding utterance as "trigger". Finally, Haegeman and Hill (2013) concede that it is difficult to determine the precise interpretive properties of Attitude SFPs, even though their semantic import is clearly discernible when comparing sentences with and without them.

Starting with the Attitude head *ne* discussed in the preceding section, its compatibility with a declarative clause is an additional argument against its alleged role as a *wh*-question clause typer:

(40) [$_{AttP}$ [$_{TP}$ *Mùníhēi   jīnnián   dōngtiān   méi   xià   xuě*]   *ne*]*!*
　　　　　　Munich   this.year   winter   NEG   fall   snow   ATT
　　'Surprisingly, it didn't snow in Munich this winter!'

The Attitude head *ma* (henceforth *ma*$_{Att}$) implies that the speaker presupposes the hearer not to be up to date and provides a correction of the hearer's belief, conveying something like 'this is self-evident', 'you should know', 'don't you see?' (cf. Chao Yuen Ren's [1968: 801] term "dogmatic assertion"):

(41) *Tā   bù   shì   Lǎolǐ   ma?   Ràng   tā   jìnlái   ma*$_{Att}$*!*
　　3SG   NEG   be   Laoli   FORCE   let   3SG   come.in   ATT
　　'Isn't that Laoli? Let him come in. (Why do I have to tell you ?)'
　　(Lü Shuxiang 2000: 375)

(42) *Wǒ   shuō   jīntiān   shì   xīngqīsān   ma*$_{Att}$*!   Nǐ   shuō   bù   shì!*
　　1SG   say   today   be   Wednesday   ATT   2SG   say   NEG   be
　　'I say it's Wedndesday today! You say it isn't!'
　　(Zhu Dexi 1982: 213)

The Attitude head *ma*$_{Att}$ is clearly distinct from the Force head *ma* encoding *yes/no* questions, as generally acknowledged in the literature (cf. Chao Yuen Ren 1968: 800–801; Zhu Dexi 1982: 211–213; Lü Shuxiang 2000: 375–376, among others) and neatly illustrated by (41), where both SFPs occur in successive sentences. Whereas in the *yes/no* question, the intonation rises at the end of the sentence and *ma* cannot be stressed, the second sentence is pronounced with a falling intonation towards the end and *ma*$_{ATT}$ can, but need not be stressed. (*Contra* Li Boya [2006: 64–65] who postulates a

single *ma* "mark[ing] a high degree of the strength of the assertive or directive force".)[11]

The Attitude head *a* has a rather complicated morphophonemics depending on the preceding word, which is often reflected in different transliterations: *ia, (u)a, (n)a, (ng)a* etc. (cf. Chao Yuen Ren [1968: 803], Zhu Dexi [1982: 212], Yang-Drocourt [2007: 192–195] for detailed discussion). For ease of exposition, we gloss over these phonological alternations and use the transliteration *a* throughout. The Attitude head *a* is rather ubiquitous and occurs with all kinds of sentence types (declaratives, questions, imperatives, exclamatives), which makes its semantic characterization very difficult. Scholars agree that *a* conveys the personal implication of the speaker and has a general softening effect; the different interpretations observed for *a* are then due to the different sentence types it combines with (cf. Chao Yuen Ren 1968: 803–806; Zhu Dexi 1982: 212; Li and Thompson 1981: 313–317; Beutel 1988, among others). For example, Chao Yuen Ren (1968: 804) observes that a question with the SFP *a* is less blunt than one without it, an effect which can be paraphrased as 'by the way' or 'excuse me' etc.

(43) *Nǐ   míngtiān   chūqù   bù   chūqù   a?*
    2SG   tomorrow   go.out   NEG   go.out   ATT
    '(By the way) are you going out tomorrow?'

Likewise, an imperative with the Attitude head *a* has less the flavour of a command than an imperative without it:

(44) *Shuō   a,   bié   hàipà   a!*
    say   ATT   NEG   be.afraid   ATT
    'Come on, say it, don't be afraid!

In an exclamative, *a* expresses the emotion of the speaker, which, depending on the sentence meaning, can be anger, astonishment, enthusiasm etc.:

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11 Chao Yuen Ren (1968: 801) explicitly addresses the distinction Force head *ma* vs Attitude head *ma* and notes the latter as *me*: "Because particles are in the neutral tone and unstressed, the low vowel *a* and the midvowel *e* are indistinguishable. However, in questions ending in *ma* [i.e. the Force head; W.P., V.J.P.], the sentence intonation is usually fairly high and ends in a slight drawl. It is therefore distinguishable from P5 *me* [i.e. the Attitude head; W.P., V.J.P.] below, which is always short." Since nowadays the Attitude head is pronounced *ma*, we do not follow Chao Yuen Ren (1968), but note it as *ma*$_{Att}$. Also note that for reasons poorly understood, the *yes/no* question force head *ma*, unlike the imperative force head *ba,* cf. (51) below, is incompatible with any Attitude head.

(45) *Nǐ   kàn   a,   biànhuà   duō   dà   a!*
    2SG see   ATT change much big ATT
    'Look, how much everything has changed!'
    (Yang-Drocourt 2007: 311)

(46) *Nǐ   yě   yào   qù   a?!*
    2SG also want go ATT
    'Oh, you are going, too?!'

Zhene is another Attitude head. It does not only convey an exaggeration by the speaker, but also corrects the presupposition of the co-speaker who underestimates the degree of the property in question.

(47) *Tā (*fēicháng)   piāoliang   zhene!*
    3SG extremely   pretty   ATT
    'She is really pretty!'

(48) *Tā   kě   gāo   zhene!*
    2SG unmistakably tall ATT
    'He is tall indeed!'

Given that *zhene* already indicates a maximal degree, the presence of a degree adverb such as *fēicháng* 'extremely' is excluded; by contrast, speaker-oriented adverbs such as *kě* 'unmistakably' are acceptable. This sensitivity of the Attitude head *zhene* to TP-internal material such as adverbs indicates that in the absence of intervening projections, the TP is accessible to a high C-head such as AttitudeP.

    In addition to the two Force heads ba_{Qconf} and ba_{Imp}, there is a third *ba* realizing AttitudeP:

(49) *Wàimiàn   zài   xià   yǔ   ba.*
    outside   PROG fall rain ATT
    'Probably, it is raining outside.'

Ba_{Att} indicates probability; thus (49) would be felicitous when uttered in a room without any windows where the speaker makes a guess based on the noise of the falling rain.

    Finally, like LowCP, AttP must be further divided into two subprojections.

(50) [$_{Att2P}$ [$_{Att1P}$ [$_{TP}$ *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.'

This sentence contains two Attitude heads, *ne* and *ba*; it is part of a conversation about video games found on the web (and double-checked with native speakers for its acceptability). The order of *ne* and *ba* is fixed, the sequence **ba ne* being ungrammatical. Their exact semantic contribution is difficult to tease apart here; however, the import of *ba* can be rendered by "very probably".

7 The hierarchy of co-occurring SFPs and the root vs non-root asymmetry in the Chinese CP

Having described the three layers, LowCP, ForceP and AttP, we can now proceed to examples where several SFPs co-occur in the same sentence and obey the strict order corresponding to the hierarchy of their respective subprojections. Note that for semantic reasons, it is quasi-impossible to find examples where each of the three layers (LowCP, ForceP and AttP) is realized. In fact, Zhu Dexi (1982: 208) was well aware of this problem. Accordingly, when establishing the relative order between several SFPs, he applied the notion of *transitivity*: if a given SFP *A* is shown to precede the SFP *B* and SFP *B* precedes the SFP *C*, then necessarily SFP *A* likewise must precede *C*. This same notion of transitivity also underlies Zhu Dexi's (1982: 208) statement that the relative order always holds, i.e. also when a given SFP position remains empty, as in the combination of the Low C *le* with the Attitude head *ou*:

(51) *Bù   zǎo   l'ou* [= le + ou],   *kuai   zou   b'ou* [= ba + ou]
    NEG   early   SFP(fusion)   fast   go   SFP(fusion)
    'It's getting late! Hurry up and go!'
    (Chao Yuen Ren 1968: 808)

Given that the Attitude head *ou* (expressing the speaker's impatience) consists of a single vowel, it fuses phonetically with the preceding SFP (*le* and *ba*) into a single syllable, resulting in *l'ou* and *b'ou*.

    The examples below illustrate the split LowCP followed by either an Attitude or a Force head:

(52) *Wǒ   zhǐbúguò   chū   chāi   le   éryǐ   a!*
    1SG   merely   go.out   business.trip   LowC1   LowC2   ATT
    'I only went on a business trip (i.e. it is not that I wouldn't come back)!'

(53) *Tā   jǐnjǐn   dǎ-cuò   zì   le   éryǐ   ma?*
    3SG   only   type-wrong   character   LowC1   LowC2   FORCE
    'Did he only make spelling mistakes?'

Note that the combinations **éryǐ le ma*, **le ma éryǐ*, **ma le éryǐ*, and **éryǐ ma le* are all excluded and thus confirm the requirement of a rigid ordering.

As illustrated in example (48) above with only one SFP realizing Attitude, in the absence of an intervening projection, the highest C can select the TP directly as its complement. On the other hand, when projections are spelt out, it is always the leftmost SFP which s-selects the complement (TP or CP) to its left, not the next highest SFP.

(54) a. *Nǐ   míngtiān   chī   xīcān   ma?*
        2SG   tomorrow   eat   western.food   FORCE
        'Will you eat western food tomorrow?'
     b. **Nǐ   míngtiān   chī   xīcān   láizhe*
        2SG   tomorrow   eat   western.food   LowC
     c. **Nǐ   míngtiān   chī   xīcān   láizhe   ma?*
        2SG   tomorrow   eat   western.food   LowC   FORCE

As indicated in (54b), *láizhe* is incompatible with a TP containing the adverb *míngtiān* 'tomorrow', and the same incompatibility is observed in (54c); accordingly, this unacceptable LowCP cannot serve as the complement for *ma*. The fact that *ma* itself allows for a TP complement with *míngtiān* (54a) cannot save (54c).

So far we have limited our discussion to SFPs occurring in matrix sentences, i.e. root contexts. This is important because most C-elements in Chinese are prohibited in embedded, non-root contexts.[12] More precisely, only Low Cs are acceptable in embedded contexts, cf. (55)–(57), whereas Force and Attitude heads, cf. (58)–(60), are completely excluded here and only acceptable in root contexts (cf. Paul [2014, 2015: Ch. 7] for further discussion). Accordingly, the three-layered split CP 'LowCP < ForceP < AttitudeP' exclusively holds for root contexts.

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12 The literature on the Chinese C-system, from Lisa Lai-Shen Cheng (1991) up to the more recent studies by Li Boya (2006), Xiong Zhongru (2007), Hsieh and Sybesma (2008), Huang, Li, and Li (2009: 34–35), among others, has so far not acknowledged the *systematic* character of the root/non-root asymmetry and has at best stated the root-only distribution as the idiosyncrasy of individual SFPs (cf. Li and Thompson 1981: 557; Tang Ting-chi 1988: 363–365, for *ma*; and Lisa Lai-Shen Cheng 1991; Li Yen-hui 1992: 153, for *ne*). Whether Chinese has embedded root phenomena is still an open question. For first attempts to address this issue, cf. Lu Peng (2008), Pan Victor Junnan (2012), Paul (2011).

(55) *Tā   méi   gàosù   wǒ* [$_{ClowP}$ [$_{TP}$ *Lǐsì   bù   qù   Bólín*]   *le*]
      3SG   NEG   tell   1SG   Lisi   NEG   go   Berlin   LowC
      'He didn't tell me that Lisi no longer wants to go to Berlin.'

(56) [$_{DP}$ [$_{ClowP}$ [$_{TP}$ *Gāngcái   dǎ   diànhuà*]   *láizhe*]   *de   rén*]
                         just   strike phone   LowC   SUB   person
      dàodǐ   shì   shéi?
      in.fact   be   who
      'Who on earth was the person that called just now?'
      (Pan Victor Junnan 2012: Ex. [41])

(57) [$_{TP}$*Wǒ   shì* [$_{CP}$ [$_{TP[-fin]}$ t_{wo} *cónglái   bù   chōu   yān*]   *de*]].
            1SG   be   ever   NEG   smoke   cigarette   [-root]C
      '(It is the case that) I have never smoked.'

While the complement of *gàosù* 'tell' in (55) and the relative clause in (56) can either be a CP or a TP, in the propositional assertion construction (57) the copula *shi* 'be' requires a projection headed by the non-root C *de* as complement (cf. Paul and Whitman 2008). Accordingly, *de*, which in turn selects a non-finite TP (hence the obligatory subject raising to the matrix TP), can be considered a subordinating C on a par with e.g. *that*.

(58) a. *Wǒmen   yīqǐ   qù   ba$_{IMP}$!*
         1PL   together go   FORCE
         'Let's go there together.'
     b. *Tā   yào   wǒmen* [*pro yīqǐ   qù   (*ba$_{IMP}$)*].
         3SG   ask   1PL   together go   FORCE
         'He asked us to go there together.'

(59) {*[$_{ForceP}$[$_{TP}$ *Ākiū   lái*]   *ma*] / [$_{TP}$ *Ākiū   lái   bù   lái*]}
                          Akiu   come   FORCE   Akiu   come   NEG   come
      méi   yǒu   guānxi].
      NEG   have   relation
      'Whether or not Akiu comes doesn't matter.'

(60) *Tā   bù   zhīdao* [*Ākiū   lái   bù   lái*]   (**ne*)].
      3SG   NEG   know   Akiu   come   NEG   come   ATT
      'She doesn't know whether Akiu will come or not.'

(59) illustrates the impossibility for a CP headed by the *yes/no* question *ma* to occur in an embedded context; by contrast, the polar A-*not*-A question is acceptable here.

Note finally that Force heads were not always banned from non-root contexts in the history of Chinese. The *yes/no* question Force head *hū* was acceptable in matrix and embedded questions:[13]

(61) [_{ForceP} [_{TP} *Lǔ   kě   qǔ*]   *hū*]?   *Duì-yuè* [pro *bù   kě*].

              Lu   can   take   FORCE   answer   NEG   can

              'Can the state Lu be annexed? He answered: No, it cannot.'

              (*Zuozhuan*, Min 1; 4th c. BC)

(62) *Bù   zhī*   [_{ForceP} [_{TP} *tiān   qì   Lǔ*]   *hū*].

     NEG   know   heaven   abandon   Lu   FORCE

     'I do not know whether Heaven has abandoned the state of Lu.'

     (*Shǐjì* 33; 1542; 2nd c. BC)

Apparently, the ban on Force and Attitude heads in non-root contexts is a rather recent development in the history of Chinese.

This section has illustrated the well-known rigid ordering among SFPs in the three layers as well as within the subprojections of LowCP and AttitudeP.

8 The head-final CP in VO languages from a typological perspective

The root vs non-root asymmetry holding for the Chinese C system just discussed is important in two respects. First, it demonstrates that in addition to their s- and c-selectional features, SFPs qua C-heads have to be specified for the feature [±root] as well. The SFP *ma* e.g. at least has the features [polar question force] and [+root] and c-selects a declarative TP only. The comparison with the SFP *ba*$_{Qconfirmation}$, cf. (27) above, shows that the feature [polar question] needs to be further refined in order to distinguish the true information seeking question encoded by *ma* from

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13 Biberauer, Holmberg, and Roberts (2014: 192) deplore "the paucity of long-term attestation of most of the world's languages". While this observation is correct, this is no reason to neglect Chinese with its more than 3000 years of documented history, which shows that the three-layered head-final CP has been attested since the 6th c. BC, against the backdrop of constant VO order (cf. Djamouri, Meistererernst, and Paul [2009], Paul [2008, 2014] and references therein).

the confirmation seeking question with *ba*, the other features being shared by both SFPs. With respect to their featural make-up, Chinese SFPs are therefore on a par with complementizers such as English *that* and *if*, which besides the features for Force (declarative or interrogative, respectively) and [+finite] also encode [-root]. This challenges Huang, Li, and Li's (2009: 35) view that such complex feature bundles are a characteristic of functional categories in Indo-European languages, but not in Chinese.

Second, this "syncretic" character makes it impossible to dismiss Chinese SFPs as "categorially deficient", "syncategorematic" or "acategorial" (cf. Bibe-rauer, Holmberg, and Roberts 2007, 2008, 2010, 2014; Biberauer, Newton, and Sheehan 2009).[14] The dismissal is motivated by the intention to maintain the cross-categorial generalization associating the sentence-final position of C with OV languages only (cf. Dryer 1992: 102, 2009).[15] This generalization is impor-tant for Biberauer, Holmberg, and Roberts because it states the non-existence of structures violating the *Final-over-Final Constraint*, which precisely excludes the configuration where a head-final phrase dominates a head-initial one. The different attempts by Biberauer, Holmberg and Roberts over the past to come to terms with the head-final CP in the VO-language Chinese, illustrated by their successive reformulations of the FOFC, all have in common that SFPs are likened to "extra-metrical" elements in phonology, i.e. elements not counting for rules, in this case the FOFC. Whether this type of "extra-metrical" element can indeed exist in syntax is not discussed, notwithstanding the far-reaching nature of this claim. Last but not least, the issue of how to account then for the rigid ordering among the different layers within the split CP, the intricate semantics of SFPs and their s- and c-selectional features is never addressed. Nor do Biberauer, Holmberg, and Roberts explain how overt elements that are invisible for constraints of UG, among which the FOFC, can be correctly acqui-red by the child.

In any case, the at first sight solid-looking empirical basis for Dryer's (1992, 2009) claim shrinks considerably under a more careful scrutiny. When correla-ting the feature 92a "polar question particle" in the *World Atlas of Languages* (cf. Dryer 2013a) (the category C not being searchable) with word order, OV and

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14 In fact, C heads in Mandarin Chinese turn out to be more "syncretic" than Cs in e.g. German, where according to Struckmeier (2014), TP-internal modal particles spell out "surplus" features of C. In Chinese, by contrast, all these features are located on C alone.
15 Dryer (1992: 102) states that "[…] in fact it may be an exceptionless universal that final complementizers are found only in OV languages. […] complementizers are therefore verb patterners, while the Ss they combine with are object patterners." In Dryer (2009), the 140 VO languages examined are all said to have a sentence-initial C.

VO languages behave in fact more or less alike, insofar as for both word orders the sentence-initial position (observed for 37 OV and 82 VO languages, respectively) is much rarer than the sentence-final position (observed for 140 OV and 154 VO languages, respectively). Since against the backdrop of Rizzi's (1997) split CP approach it is likely that many of the question particles can be analysed as complementizers, this considerably weakens Dryer's (1992: 102, 2009: table [24]) claim that complementizers are verb patterners and that accordingly final complementizers are found only in OV languages. As a result, Chinese is very probably just one example among many where a VO language has a head-final (interrogative) CP.

Concerning the position of SFPs in general, going beyond those encoding polar question Force, one has to fall back on the distribution given for *adverbial subordinator* in WALS (cf. feature 94; Dryer 2013b): 279 VO-languages with a sentence-initial adverbial subordinator vs 2 with a sentence-final subordinator. However, as discussed by Dryer (2013b) himself, the label *adverbial subordinator* is a cover term for different categories, among them adpositions and case suffixes. Accordingly, the results in WALS cannot be uncritically used as testing ground for the predictions made by the FOFC for the functional category C in embedded contexts (*pace* Biberauer, Holmberg, and Roberts [2014] and preceding publications). Also note that there are 30 VO languages with mixed order, among them Cantonese (a fact not mentioned in Biberauer, Holmberg, and Roberts' [2014: 183] discussion of the figures in WALS). This is noteworthy insofar as the potential candidates in Mandarin Chinese falling under the label *adverbial subordinator* can be shown to include sentence-level adverbs and clause-selecting prepositions (cf. Paul 2014, 2015: Ch. 8), i.e. elements preceding the following clause, in addition to the sentence-final non-root C *de* in the propositional assertion construction (cf. Section 7 above). It is therefore not excluded that these "mixed" order languages precisely illustrate the Chinese case.

In the face of the well-established existence of the FOFC violating configuration [[V O] C], the only way out to reconcile SFPs qua Cs in Chinese with the FOFC is an analysis à la Kayne (1994) where a head-final CP is derived from a head-intial CP by movement of the complement TP into the specifier position. However, this account does not work, either, because it shows a number of serious shortcomings, discussed in detail by Bayer (1999: §3) (also cf. Abels and Neeleman 2012). The most obvious problem for a Kayne-style analysis is the impossibility of the SFP to c-command its raised complement. This is clearly an undesirable result, because as demonstrated above, the construal of *wh*-indefinites 'something, someone', crucially depends on the c-command of the TP by the *yes/no* question Force head *ma*:

(63) a. *Nǐ   xiǎng   chī   diǎn   shénme ↑?*   (= [8a]–[8b] above)
    2SG   want   eat   a.bit   what
    'What do you want to eat?'
  b. *Nǐ   xiǎng   chī   diǎn   shénme   ma?*
    2SG   want   eat   a.bit   what   FORCE
    'Do you want to eat a little something?'

Furthermore, as pointed out by Bayer (1999) 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) therefore concludes that head-final Cs should not be analysed as attractors of TP and that head-final CPs are indeed merged as such.

9 Conclusion

The present article has provided extensive evidence to show that SFPs in Chinese are fully-fledged functional heads with a complex feature make-up, on a par with C elements in e.g. Indo-European languages. Chinese SFPs select and project, as evidenced by the strict hierarchy for co-occurring SFPs in the split CP. Structures with a head-final CP and VO order are not only attested in Chinese, but also in other languages (Vietnamese, Niger-Congo languages, etc.). This structure must be merged as such and cannot be derived by postulating movement from a head-initial CP. As a result, the FOFC, which precisely excludes the configuration [[V O] C], cannot be a principle of UG, but instead illustrates a statistical observation (cf. Whitman [2008], Paul [2015: Ch. 8], for further discussion).

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