Sentence-final particles in Mandarin Chinese as heads in a multi-layered CP

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1. *Introduction*

This talk presents selected results of my research on the right periphery over the past decade, building on the extensive literature written in Chinese and providing a systematic study of SFPs. Mandarin Chinese features not only SFPs linked to discourse (as would be expected from its alleged "discourse-oriented" nature), but – in a much greater proportion – also SFPs encoding sentence-type as well as SFPs interacting with TP-internal properties such as aspect and negation (which depending on the circumstances are obligatory). They all occupy a position in the (right) sentence periphery (CP) and are thus construed with the entire clause, leading to a transparent syntax/semantics mapping in terms of scope relations. More precisely, SFPs realize heads in a three-layered split CP à la Rizzi (1997):

(1) [Attitude-CP [Force-CP [ClowP [TP DP V NP] C1] C2] C3]]] Split CP in Chinese (Paul 2009)

The analysis of SFPs as different types of complementisers goes against the widespread assumption that VO languages exclude a (surface) head-final CP (cf. among others Dryer 1992, 2009). In other words, complementisers are claimed to pattern with verbs orderwise and as a consequence, only OV languages are expected to have a (surface) head-final CP with the complementiser following its complement clause. By contrast, Chinese as a VO language should possess head-initial CPs only, like English. Chinese is thus clearly "misbehaving" and challenges the general validity of cross-categorial correlations set up in typological studies.

1.1. Zhu Dexi (1982)

Zhu Dexi (1982: 207–213) identifies three distributional classes of SFPs whose relative order is fixed. The first class occurs nearest to the sentence proper and is said to express "tense"; it comprises SFPs such as *le* and *láizhe* (cf. (6) below). The SFPs of the second class, SFP_2, to the right of the position for SFP_1 convey notions such as *yes/no question* (*ma*) and imperative (*ba*) (cf. [3] and [4] below). The third, "outermost" class of SFP_3, 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. Zhu Dexi (1982: 208) emphasizes that co-occurring SFPs belong to hierarchically different levels. We thus obtain the following configuration:

(2) [S …..] SFP_1] SFP_2] SFP_3]

The ordering restrictions underlying the configuration in (2) are illustrated below:

(3) a. [CP2 [CP1 [TP Tā bù chōu yān] le] ma]?
3SG NEG inhale cigarette SFP1 SFP2
'Does he no longer smoke?'

b. *[CP1 [CP2 [TP Tā bù chōu yān] ma] le]?
3SG NEG inhale cigarette SFP2 SFP1

(4) a. [$_{CP3}$ [$_{CP2}$ [$_{TP}$ Jìnlái] b'ou (=ba+ou)]]! (Zhu Dexi 1982: 212)
enter SFP(fusion) SFP2+SFP3
'Hurry, come in!'

b. *[$_{CP2}$ [$_{CP3}$ [$_{TP}$ Jìnlái] ou] ba]!
enter SFP3 SFP2

Starting with the last example (4), a SFP_3 such as *ou*, which expresses the speaker's impatience, must follow the SFP_2 *ba* (expressing a" softened" imperative); since it consists of a single vowel, it fuses phonetically with the preceding SFP into a single syllable. Likewise, the innermost SFP_1 *le* must always precede SFP_2 such as the interrogative *ma* and the imperative *ba* (cf. [3a] and [4a]), as shown by the unacceptability of the opposite order (cf. [3b] and [4b].

In fact, Zhu Dexi (1982) basically uses the same reasoning in order to determine the relative order of SFPs as Rizzi (1997) does when establishing the hierarchy of the different projections in the split CP (cf. the discussion immediately below). Since – for semantic reasons – it is rather difficult to construe and find sequences where all the three classes co-occur, Zhu (1982: 208) applies the notion of *transitivity* in order to determine the relative order: if a given SFP *A* is shown to precede the SFP *B* and the SFP *B* precedes the SFP *C*, then necessarily the 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 SFP_1 *le* with the SFP_3 *ou* in (5) below. Last, but not least, SFPs of the same class are mutually exclusive, such as e.g. *le* and *láizhe*, which both belong to the innermost class, SFP_1 (cf. [6] below).

(5) Bù zǎo l'ou [= le + ou]!
NEG early SFP (fusion: SFP1+SFP3)
'Hey, it's already late!'

(6) a. [$_{CP1}$[$_{TP}$ Wǒ chī wǎnfàn] le / láizhe]
1SG eatdinner SFP1/ SFP1
'I (just) had dinner.'

b. *[$_{CP1}$[$_{TP}$ Wǒ chī wǎnfàn] {le láizhe}/{láizhe le}]
1SG eatdinner SFP1 SFP1 / SFP1 SFP1

1.2. *The split CP à la Rizzi (1997)*

Rizzi (1997) demonstrated in great detail that the sentence periphery above TP does not consist of a single CP hosting e.g. the fronted *wh*-phrase (and the "dummy" verb *do*, in the absence of an auxiliary verb) in English sentences such as *[$_{CP}$ What$_i$ [$_{C'}$ [$_{C°}$ did] [$_{TP}$ he buy t_i]]]?*. On the contrary, the sentence periphery is "split up", i.e. divided into numerous subprojections displaying a rigid order, among them projections for topic phrases and focus phrases. As for the heads present in the left periphery, i.e. complementisers, he likewise argued that they are of different types and hence occur in different projections within the split CP. Complementisers indicating the type of clause (declarative "force", interrogative "force" etc., e.g. *that, whether* in English; *che* in Italian) head the projection ForceP *preceding* the topic and focus projections; by contrast, prepositional complementisers in Romance such as Italian *di* introducing infinitivals realize the head of FinitenessP, a projection immediately above TP and *below* topic and focus projections:

(7) *Penso (*a Gianni) <u>che</u>, a Gianni, gli dovrei parlare*
think.1SG to Gianni that to Gianni him should speak
'I think that to Gianni, I should speak to him.'

(8) *Penso, a Gianni, <u>di</u> (*a Gianni) dovergli parlare*
think.1SG to Gianni that to Gianni him.should speak
'I think, to Gianni, 'of' to have to speak to him.' [sic]
(Rizzi 1997: 304, [61], [62])

Subsequent studies of mostly Romance and Germanic languages extended this approach to *matrix* clauses and analysed as different types of complementisers those items at the sentence periphery that had so far been called "particles", for want of a precise categorial status (cf. among others Munaro and Poletto 2002, 2011). Importantly, these studies also provided evidence for the existence of a discourse-related additional projection *above* ForceP, equivalent in function to the projection hosting SFP_3 in Chinese (cf. among others Benincà 2001 for Romance languages; cf. Haegeman 2008, 2014; Haegeman and Hill 2013 for West-Flemish):

(9) DiscourseP > ForceP > FiniteP > TP (Split CP for Germanic and Romance languages)

(Note that [9] concentrates on the subprojections within the split CP that are exclusively realized by heads, to the exclusion of topic and focus phrases.). The hierarchy in (9) thus extends Rizzi's (1997, 2004) original hierarchy where the highest projection had been ForceP.

If we abstract away from the directionality of the different subprojections composing the split CP (head-initial for Rizzi (1997, 2004), head-final in Chinese) and just focus on the nature of the projections and their relative hierarchy, the parallelism between (9) and Zhu Dexi's (1982) configuration (cf. [2] above) is evident. The lowest projection, FiniteP, is instantiated by the first class of SFPs (labeled *tense* by Zhu Dexi); ForceP is realized by SFPs of the second class indicating the sentence type (e.g. interrogative, imperative etc.) and the highest projection hosts the SFPs of the third class conveying the speaker's attitude or feelings, hence labelled *AttitudeP* in Paul (2009) (corresponding to DiscourseP in [9]). Given the controversial status of finiteness in Chinese (cf. Paul 2018 and references therein), the more neutral label *low CP* is chosen for the innermost layer in Chinese hosting SFPs of the first class:

(10) TP < ClowP < ForceP< AttitudeP (Split CP for Chinese SFPs, abstracting away from TopicP and *lián* 'even' FocusP above TP)

2. *Overview of the three-layered CP in Chinese*

The analysis of SFPs as complementisers goes back to Thomas Hun-tak Lee (1986) who was the first to claim C-status for the yes/no question particle *ma*. The analysis of *ma* as C became the standard analysis and was confirmed by subsequent studies, which also introduced another C, i.e. *ne* (cf. among others L.-S. Lisa Cheng 1991, Y.-H. Audrey Li 1992). Tang Ting-chi (1989: 541) extended the C analysis to SFPs in general. The architecture of the Chinese sentence periphery was developed in more detail within Rizzi's (1997) split CP approach by Paul (2005) and subsequent work, where an additional projection AttitudeP *above* Rizzi's ForceP was motivated (cf. Paul 2009, 2014). The research on SFPs within the split CP approach inspired by Rizzi (1997) has gone beyond Mandarin and included other Sinitic languages (cf. among others Li Boya 2006 on Cantonese, Mandarin and Wenzhou; Sybesma and Li Boya 2007 on Cantonese, Hsieh and Sybesma 2008 on Cantonese and Taiwan Southern Min).

The present talk exclusively concentrates on Mandarin.

(11) The three layers in the split root CP (Paul 2014; Pan 2015; Paul & Pan 2017)

<table>
<tr><td>C_1 (Low C)</td><td></td><td>C_2 (Force)</td><td colspan="2">C_3 (Attitude)</td></tr>
<tr><td>le currently relevant state</td><td rowspan="6">éryǐ ‘only’</td><td>ba_{Imp} (advisative ba)</td><td colspan="2">a softening</td></tr>
<tr><td rowspan="5">láizhe recent past

ne$_1$ continuing sit.</td><td>$ba_{Qconfirmation}$</td><td colspan="2">ei gentle reminder</td></tr>
<tr><td rowspan="4">ma$_2$ yes/no question</td><td colspan="2">ou impatience, surprise</td></tr>
<tr><td colspan="2">ma$_3$ dogmatic assertion</td></tr>
<tr><td colspan="2">zhene intensifier</td></tr>
<tr><td>ne$_3$ exaggeration</td><td>ba$_3$ uncertainty</td></tr>
</table>

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

2.1. Low CP: the C_1 heads *láizhe*, *ne*$_1$, *le*, *éryǐ* ‘only’

According to Zhu Dexi (1982: 208), the low C *láizhe*, *le*, and *ne* as “innermost” SFPs are all sensitive to the properties of the sentence-internal predicate are all “tense-related”:

(12) a. Xià yǔ ne Zhu Dexi (1982: 209)
fall rain CLOW
‘It’s (still) raining.’
(Zhu Dexi’s comment: It was raining before.)

b. Xià yǔ le
fall rain CLOW
‘(Look), it’s raining.’
(Zhu Dexi’s comment: It didn’t rain before.)

c. Xià yǔ láizhe
fall rain CLOW
‘It just rained.’
(Zhu Dexi’s comment: It rained a moment ago.)

On the basis of these examples, Zhu Dexi (1982: 209) proposes the following interpretative values for the three SFPs: *láizhe* indicates that the event has occurred in the recent past, *le* signals that the situation at hand is (conceived of as) new, and *ne*$_1$ expresses a continuing situation. Naturally, Zhu Dexi (1982) does not intend to postulate *tense* as a verbal category for Chinese. The characterizations given rather attempt to capture the semantic import of the SFPs, which is also reflected in the constraints imposed on the type of TP each SFP can select, to be examined in detail in the following sections. Note that in (12a-c), the low complementisers are all obligatory (given that the activity predicate bears no aspect marking) in order to make the sentence finite (cf. Paul 2018 and references therein).

2.1.1. Low C *láizhe*

Láizhe usually indicates that the event time is recent past and then often co-occurs with adverbs such as *gāngcái* ‘just, a moment ago’

(13) [Tā gāngcái hái zài zhèr] láizhe, [zěnme yī zhuǎnyǎn bù jiàn] le?
3SG just still be here CLOW how 1 twinkling NEG see CLOW
‘He was still here a moment ago, how come he has disappeared all of a sudden?’
(Lü Shuxiang 2000: 348)

What counts as “recent past” also depends on the speaker’s judgement of the immediacy of the event at hand (cf. Song Yuzhu 1981: 272). Accordingly, *láizhe* is compatible with temporal expressions such as *qián jǐ nián* ‘the past couple of years’, when the speaker wants to indicate that time has passed very fast and that the event still feels as though very much present:

(14) [Qián jǐ nián tā hái zài zuò shēngyi] láizhe
past several year 3SG still PROGR do business CLOW
'In the past couple of years, he was still doing business.'

Furthermore, "recent past" can also apply to the speech time of a preceding utterance or refer to a former state of knowledge as in (16b) (cf. Chao Yuen Ren 1968: 810):

(15) Shéi fā yán láizhe?
who issue speech CLOW
'Who did you say would give a speech ?'

(16) a. Nǐ xìng shénme?
2SG call what
'What's your family name?'

b. [Nǐ xìng shénme] láizhe? (Chao Yuen Ren 1968: 810)
2SG call what CLOW
'What (did you just say) is your family name?'
'What was your family name?' (I forgot.)

Being a low C, *láizhe* has access to material inside TP, as evidenced by the fact that *láizhe* cannot select as complement a TP containing a telic predicate (cf. Song Yuzhu 1981: 273):

(17) *[Tā rù dǎng] láizhe
3SG enter party CLOW
(Intended: 'He entered the party recently.')

Láizhe "recent past" is incompatible with telic verbs because their resultant state still holds at speech time, which is in contradiction with *láizhe* precisely excluding the speech time.

For a subset of speakers, *láizhe* is also incompatible with TPs whose predicate is negated (by either *bù* and *méi*), because in addition to locating the event in the recent past it also asserts its having taken place (cf. Song Yuzhu 1981: 275, Lü Shuxiang 2000: 348-349):

(18) a. Nǐ gāngcái shuō shénme láizhe ?
2SG just say what CLOW
'What did you just say?'

b. Wǒ méiyǒu shuō shénme (%láizhe)
1SG NEG say what CLOW
'I didn't say anything.'

The event assertion component associated with *láizhe* also accounts for the fact that only *wh*-questions are compatible with *láizhe* (cf. [19]), to the exclusion of yes/no questions formed by adding the yes/no question Force head *ma*:

(19) a. % [ForceP [ClowP [Tā fā yán] láizhe] ma] ? (Lü Shuxiang 2000: 349)
3SG issue speech CLOW FORCE
(Intended: 'Did she just give a speech?')

b. [ForceP [ClowP [Tā fā yán] le] ma]?
3SG issue speech CLOW FORCE
'Did she give a speech?'

The low C status of *láizhe* is further confirmed by the impossibility of its cooccurrence – in either order – with another low C such as *le*:.

(20) a. [ClowP[TP Wǒ chī wǎnfàn] le / láizhe]
1SG eat dinner CLOW/ CLOW
'I (just) had dinner.'

b. *[ClowP[TP Wǒ chī wǎnfàn] {le láizhe}/ {láizhe le }]
1SG eat dinner CLOW CLOW/ CLOW CLOW

2.1.2. Low C *ne1*

N.B. There is a homophonous Attitude head *ne*, noted as *ne3* (because in the highest CP3). Besides the different meanings associated with each of these heads, to acknowledge the existence of two homophonous *ne* hosted by distinct subprojections in the split CP is the only way to account for the different orders observed in combination with other SFPs; the assumption of a single *ne* would simply lead to contradictory formulations of its ordering restrictions. (Contra among others Hu Mingyang 1981; Paris 1981: 380–417; William C. Lin 1984; Li Boya 2006: 64–65; Wu Guo 2005; Victor Junnan Pan 2011: 94.)

As demonstrated by Yan Shanshan (2017: §3.2.2, §7.2.2), *ne* only allows for atelic predicates inside the TP it combines with, and excludes telic predicates:

(21) a. [ClowP[TP Xiǎo Wang *cānguān* gōngchǎng] ne] (Yan Shanshan 2017: 26;
Xiao Wang visit factory CLOW (11) – (12))
'Xiao Wang is visiting the factory.'

b. *[ClowP[TP Xiǎo Wang *líkāi* gōngchǎng] ne]
Xiao Wang leave factory CLOW
('Xiao Wang is leaving the factory.')

(22) a. Xiǎo Wang xuéxí hànyǔ ne.
Xiao Wang leave Chinese CLOW
'Xiao Wang is learning Chinese.'

b. *Xiǎo Wang xuéhuì hànyǔ ne.
Xiao Wang acquire Chinese CLOW
('Xiao Wang is acquiring/mastering Chinese.')

Accordingly, (23) featuring the progressive aspect auxiliary *zài* is compatible with *ne1*:

(23) Tā zhèng zài tiē -zhe biāoyǔ ne (Zhu Dexi 1982: 210)
3SG just PROGR paste-IMP poster CLOW
'He is pasting posters.'

The low C status of *ne1* is also confirmed by its having to precede SFPs realizing ForceP such as *ba* (used in confirmation seeking questions):

(24) Tā hái méi zǒu ne ba?
3SG still NEG leave CLOW FORCE
'He hasn't left yet, I suppose?'

This section has established the existence of the low C *ne1*, associated with continuing states or ongoing activities. Given this description of the semantics of *ne1*, it is not surprising that it has been analysed as basically "aspectual" in nature (cf. Marjorie K. M. Chan 1980), even though *qua* SFP it occupies a position outside the sentence proper. We observe here the same tension between semantic import and syntactic position as in Zhu Dexi's (1982: 208) characterization of the low Cs *láizhe*, *le* and *ne1* as related to tense. Note that the low C *ne1* cannot be properly described in the rather general terms of "hearer engagement" proposed by analyses attempting to unify the different *ne*'s (cf. among others Hu Mingyang 1981; 417; Wu Guo 2005: 47).

2.1.3. Low C *le*

As already observed by Lü Shuxiang (1942: 260; section 15.21), the semantic import of *le* is extemely difficult to capture. This is probably the reason why of the eighty pages devoted to SFPs in Li & Thompson (1981: 238–318), sixty pages are filled with examples for *le* alone. The present section does not provide any progress on that thorny issue, either, but instead concentrates on the interaction of the low C *le* and material inside TP. Li & Thompson's (1981: 238) label "currently relevant state" for *le* is adopted here, for it captures rather well the admittedly very minimal common denominator for the different cases of *le*, i.e. the fact that it "closes off" the sentence and relates the event to the speech time (in the absence of any other explicit reference time), which might induce an interpretation of the situation as being new.

(25) [ClowP[TP Wǒ zuótiān dào Zhāng jiā chī fàn] le]
1sg yesterday go Zhang home eat food CLOW
'I went to the Zhangs for dinner yesterday.'
(Chao Yuen Ren 1968: 798)

(26) Xià xuě le!
fall snow CLOW
'(Look,) it's snowing!'

(27) Tā shì xìzhǔrèn le (Marjorie K.M. Chan 1980: 53, (25); slightly modified)
3sg be institute.director CLOW
'He is the institute director (now).' [implying he wasn't before]

(28) [CPlow[TopP[TP Wǒ yī ān mén-líng] [Top'[TP tā jiù lái kāi mén] le]]]
1SG once ring door-bell 3SG then come open door CLOW
'As soon as I rang the door bell, he came and opened the door.'
(slightly modified example from Chao Yuen Ren 1968: 799)

In (25), *le* signals that the proposition is presented by the speaker as her/his contribution relevant to the conversation at hand and can be paraphrased as 'here is what I have to say'. (26) illustrates that a situation can be presented as new with respect to the subjective perception of the speaker, i.e. it might have snowed before, but it is only at this moment that the speaker notices it. *Le* can also indicate that a situation obtains at the speech moment and did not prevail before, hence leading to its interpretation as a new situation (cf. [27]). (28) finally shows that when an explicit reference time is provided ('as soon as I rang the bell'), *le* relates the event to that time.
While in (25) – (28) it is difficult to determine the meaning *le* contributes to the sentence, the semantic contribution of *le* is more straightforward in sentences containing the perfective aspect suffix *-le* or the "neutral" negation *bù*, compatible with stative and activity verbs (cf. a.o. Teng Shou-hsin 1973, Li & Thompson 1981, Ernst 1995, Hsieh Miao-Ling 2001, Lin Jo-wang 2003).

(29) a. Wǒ zài zhèr zhù -le wǔ nián le (Zhu Dexi 1982: 209)
1SG at here live -PERF 5 year CLOW
'I have been living here for five years now.'

b. Wǒ zài zhèr zhù -le wǔ nián
1SG at here live -PERF 5 year
'I (have) lived here for five years.'

(30) [ClowP[TopP Nà [Top'[TP wǒ jiù bù děng tā] le]]]
in.that.case 1SG then NEG wait 3SG CLOW
'In that case I will no longer wait for him.'

Given that *le* relates the event to the speech time, (29a) with *le* unambiguously states that my living here still obtains at the speech time, while (29b) leaves this open. The meaning of (30) is derived in a clearly compositional way, which nicely reflects the fact that *le* as C has scope over the entire sentence: *le* signals that the proposition 'I won't wait for him' obtains at the speech time (in the absence of any other reference time), which leads to 'I will no longer wait for him'.

(31) Tā gāngcái hái zài bàngōngshì láizhe / *le. (Paul & Pan 2017: 58, (24))
3SG just.now still at office CLOW / CLOW
'He was in his office just now.'

In (31), *le* is unacceptable, due to 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. While Low Cs have access to TP-internal material (temporal adverbs, aspect, negation) they clearly occupy a TP-external position in the left periphery (contra Erlewine 2017).

2.1.4. Low C *éryǐ* 'only'

This low C is special in two respects: it has a rather concrete meaning, can roughly be translated as 'only; this is all I have to contribute', and *ěryǐ* is located in the subprojection of Low CP that is higher than the one hosting *le* and *láizhe*, as evidenced by the order '{*le/láizhe*}+ *ěryǐ*':

(32a) [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.'

(32b) [LowCP [TP Wǒ zhǐbúguò shuō shuo] éryǐ].
1SG merely say say LOWC
'I'm just talking. (Don't take me serious.)'

2.1.5. Low CP: Interim summary

The low Cs *láizhe*, *le* and *ne1* all interact with TP-internal material, i.e. they depend on the properties of the extended verbal projection including its aktionsart, which in turn has an impact on the type of negation to be chosen. However, they clearly occupy a TP-external position in the left periphery (contra Erlewine (2017); cf. Victor Junnan Pan (2018) for a critical review). Thus, *láizhe* 'recent past' is incompatible with telic verbs, whose resultant state still holds at the speech time, a situation not compatible with *láizhe* precisely excluding the speech time. For the group of speakers that associate *láizhe* with an event-assertion feature, *láizhe* is unacceptable with negation and questioning. The semantic import of *le* is very difficult to grasp,

but the common denominator for the large variety of interpretations associated with *le* seems to be aptly captured by Li & Thompson's (1981: 238) label "currently relevant state". Like *láizhe*, *le* is sensitive to TP-internal material, as witnessed by its incompatibility with *méi* negating the completion of an event. Finally, notwithstanding its status as a SFP, *ne1* has been likened to "aspect" insofar as it exclusively combines with atelic predicates (ongoing actions or continuing states). Against this backdrop, Zhu Dexi's (1982: 208) characterization of these three innermost SFPs as "tense-related" is very insightful, even if "tense" here is naturally not meant to refer to a property of the extended verbal projection inside TP itself. Importantly, as far as I can see, the assocation with a certain "tense" is not encoded in the SFP itself, either, but rather obtains as an inference resulting from the interaction between the aktionsart and related properties of the TP-internal predicate, on the one hand, and the semantic features of the SFP itself. This view ties in with the general caveat issued by Hu Mingyang (1981: 416) that due to the complex interaction between the SFPs and the material inside TP it is often very difficult to determine the contribution of the SFPs themselves.

2.2. ForceP (CP2)

2.2.1. The *yes/no* question Force head *ma2*

The SFP *ma2* indicating the *yes/no* question status of a sentence (cf. (33b)) was the first SFP to be analysed as a complementiser (cf. Lee Hun-tak Thomas 1986, Tang Ting-chi 1989: 540):

(33) a. Tā huì shuō zhōngwén.
3SG can speak Chinese
'He can speak Chinese.'

b. [CPforce [TP Tā huì shuō zhōngwén] ma]?
3SG can speak Chinese FORCE
'Can he speak Chinese?'

Since *ma* turns a declarative sentence into a *yes/no* question, it must have scope over the entire sentence, whence the analysis of *ma* as a C-head taking a clausal complement (TP or ClowP, cf. [35] below). The complement status of TP and the head status of *ma* are confirmed by the fact that *ma* imposes selectional restrictions: it can only select a non-interrogative TP and is therefore incompatible with *wh*-questions (cf. [34a]) and TP-internal yes/no questions in the 'A-*bù* 'not'-A' form (cf. [34b]).

(34) a. *[CPforce [TP Nǐ wèn-le *shéi*] ma]?
2SG ask-PERF who FORCE
('Whom did you ask?')

b. *[CPforce [TP Tā *dǒng* *bù* *dǒng* wèntí] ma]?
3SG understand NEG understand problem FORCE
('Does he understand the problem?')

The Force head status of *ma* is confirmed by its position above, i.e. to the right of low Cs:

(35) [ForceP[ClowP[TP Tā bù chōu yān] le] ma]?
3SG NEG inhale cigarette CLOW FORCE
'Does he no longer smoke?'

Importantly, as demonstrated by Lu Jianming (1985: 236), a *yes/no* question in Chinese can also be formed without *ma*, in which case a rising intonation is obligatory (also cf. Pan 2011: 67): (The intonation in a *yes/no* question with *ma* is either rising as well or flat.)

(36) Tā huì shuō zhōngwén↗ ?
3SG can speak Chinese
'Can he speak Chinese?'

However, many syntactic contexts do not allow the option of using intonation alone.to encode a question. In tag questions with *bù shì ma* 'isn't it (the case)?', the SFP *ma* is obligatory and cannot be "replaced" by a rising intonation.

(37) Nǐ zài Běijīng jiāo shū, bú shì *(ma)?
2SG at Beijing teach book not be FORCE
'You teach 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. Pan Victor Junnan 2011: Ch. 5):

(38) 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?'

(39) a. Tā pà [shéi huì dǎ tā↑?]
3SG fear who will beat 3SG
'Who does he fear will beat him?'

b. [$_{\text{ForceP}}$ [$_{\text{TP}}$ Tā pà [$_{\text{compl. cl.}}$ 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 in English, for example, are licensed in SAI only, not in *yes/no* questions formed by rising intonation (cf. (40a-b)). Furthermore, as in Chinese, in English as well tag questions cannot be formed by a rising intonation, but require SAI instead (cf. (40c):

(40) a. * *You saw anyone↑?*

b. *Did you see anyone?*

c. *You teach in Beijing, don't you / *you don't↑?*

2.2.2. The Force head *ba*$_{Qconfirmation}$: confirmation request or conjecture

A yes/no question with *ba*$_{Qconfirmation}$ is not neutral, but implies the speaker's expectation to receive a positive answer to her/his request:

(41) Nǐ xiànzài míngbái le ba ? (Yang-Drocourt 2007: 312)
2SG now understand CLOW FORCE
'You understand now, don't you?'

(42) Jīntiān xīngqīsān ba? (Zhu Dexi 1982 : 211)
today Wednesday FORCE
'It is Wednesday today, correct?'

It is this component of confirmation request which explains why *ba*$_{Qconfirmation}$ is incompatible with *wh* questions and *yes/no* question in the 'A-not-A' form, both being genuine information seeking questions.

(43) a. *Shéi míngbái ba?
who understand FORCE

b. **Nǐ míngbái bù míngbái ba?*
2SG understand NEG understand FORCE

Lü Shuxiang (2000: 57) provides neat minimal pairs where either both *ba*$_{Qconfirmation}$ and *ma* are possible (*modulo* the associated meaning differences) or where only *ba*$_{Qconfirmation}$ is acceptable:

(44) a. Zhèi zuò fángzi shì [xīn gài de] ma?
this CL house be new build SUB FORCE
'Is this house a new one?

b. Zhèi zuò fángzi shì [xīn gài de] ba ?
this CL house be new build SUB FORCE
'This house is a new one, isn't it?'

While (44a) with *ma* is a genuine information request, this is not the case for (44b) where a positive answer is expected. Accordingly, only *ba*$_{Qconfirmation}$, but not *ma* is compatible with adverbs such as *dàgài* 'probably', *yěxǔ* 'perhaps', *shuōbùdìng* 'possibly, perhaps':

(45) [Tā dàgài yǐjīng zǒu -le] ba /*ma?
3SG probably already leave-PERF FORCE/ FORCE
'She has already left, I guess?'

(46) [Xiànzài shuōbùdìng jìngguò-le shí'èr diǎn] le {ba /*ma}?
now perhaps pass -PERF 12 o'clock CLOW FORCE/ FORCE
'It might very well be past twelve o'clock now?'

When *ba*$_{Qconfirmation}$ occurs with declarative sentences, its conjecturing component results in a weakening of the assertion (cf. Hu Mingyang 1981: 416):

(47) Nǐ tīngcuò-le ba
2SG mishear-PERF FORCE
'You must have misheard.'

2.2.3. The Force head *ba*$_{IMP}$: advice or suggestion

The SFP *ba*$_{IMP}$ 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):

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

(49) [[[Bié chàng] le] ba]! (Hu Mingyang 1981: 416)
NEG sing CLOW FORCE
'Better stop singing.'

Again, the rigid ordering with respect to the low C *le* (cf. [49] above) and the Attitude head *ou* (cf. [50] below) confirms the status of *ba*$_{IMP}$ as a Force head in CP2:

(50) Zǒu b'ou [= ba + ou] (Zhu Dexi 1982: 208)
go FORCE+ATT.fusion
'You better go!'

Whether it is possible to unify the *ba*$_{Qconfirmation}$ requesting confirmation and the advisative *ba*$_{IMP}$ is controversial, and must be left open here. Suffice it to point out that unlike Zhu Dexi (1982, ch. 15 and 16) and Lü Shuxiang (2000) whom I have followed here in distinguishing two different *ba*'s, Lu Jianming (1985: 244) is in favour of treating them as a single item. According to him, there is no intonational difference between *ba*$_{Qconfirmation}$ and *ba*$_{IMP}$ and the different interpretations obtained rely solely on the context.

2.2.4. ForceP : interim summary

The observations above straightforwardly invalidate Li Boya's (2006: 171) claim that the clause-typing heads always remain covert in Mandarin and Cantonese (whereas they may be realized overtly in Wenzhou). In particular, she doesn't see that there are two SFPs *ma,* the *yes/no* question Force head *ma*$_2$ and the Attitude head *ma*$_3$*,* (cf. section 3 below), despite the well-established difference between the two (cf. a.o. Yuen Ren 1968: 801). Both del Gobbo et al. (2015) and Bailey (2015) adopt Li Boya's (2006) incorrect claim that Chinese has no SFPs realizing Force such as imperative and interrogation. While Del Gobbo et al. (2015: 378) see this as a parallel with sentential particles in Romance, Bailey (2015: 420) considers it a general characteristic of final question particles in VO languages that they are in fact markers of "something other than interrogative force".

3. Attitude Phrase (CP3)

The SFPs instantiating AttitudeP involve both speaker and hearer, via the speaker's assumptions concerning the beliefs of the hearer. Again, Chinese is not unique in this respect, given that e.g. Japanese (cf. Endo 2007: 175–198) as well as Romance and Germanic languages likewise display particles in the sentence periphery encoding properties of the speaker-hearer interaction. Examining Romanian and West-Flemish, Haegeman and Hill (2013) postulate the projection DiscourseP, equivalent in function to AttitudeP in Chinese. Importantly, the characteristics of SFPs realizing DiscourseP 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 of the

proposition (*yes/no*). It is correct that a SFP such as the advisative *ba*IMP also conveys the speaker's (friendly) attitude, but at the same time this SFP is linked to a particular sentence type, i.e. the imperative. Furthermore, its status as Force head is confirmed by its obligatorily preceding Attitude SFPs such as *ou* (cf. [50] above). As for low C, *láizhe* 'recent past' was shown to be incompatible with TP-internal negation, implying its selecting asserted situations only (cf. sections 7.2.1.1 and 7.2.1.4 above). Attitude SFPs are thus fundamentally distinct from both low C and Force heads, an observation already made by Zhu (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 (hence infelicitous in broadcasts).

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 exactly the interpretive properties of Attitude SFPs, even though their semantic import is clearly discernible when comparing sentences with and without them. This leads to the fourth characteristic, which is the "optionality" of Attitude heads. A *caveat* is necessary here, though; if one wants to signal the discourse function associated with a particular Attitude SFP, then the presence of this SFP is evidently required.

3.1. The Attitude head *ne*$_3$

Note first of all that *ne*$_3$ is *not* a "wh-question particle", i.e. it is *not* a Force head indicating the sentence-type (*pace* Cheng Lisa Lai-Shen 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; also cf. Pan & Paul 2016). In other words, in a *wh* question (cf. (51)), or in an A-*not*-A polar question (cf. [52]), 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*$_3$, which *inter alia* is to solicit the co-speaker's attention, rendered here by "listen, and you…", it is evidently obligatory (cf. Wu Guo 2005; Li Boya 2006; Pan Victor Junnan, 2011, among others):

(51) a. Nǐ zuì xǐhuān hē nǎ ge páizi de déguó píjiǔ?
2SG most like drink which CL brand SUB German beer
'Which brand of German beer do you like most?'

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

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

Being an Att° head, *ne* can naturally also combine with a non-interrogative complement, further invalidating its alleged status as a "clause typer" for *wh*-questions. It can express exaggeration or convey a boasting tone (cf. (53)) and is obligatory in the presence of the speaker-oriented emphatic adverb *kě* 'really' (cf. (54)):

(53) [Tā huì kāi fēijī] ne! Zhu Dexi 1982: 213)
3SG can drive airplane ATT
'(Imagine) he can fly an airplane!'

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

3.2. The Attitude head *bàle*

Zhu (1982: 213) provides the neat minimal pair below (slightly changed) where *ne3* alternates with *bàle*, the latter being paraphrasable as 'that's all there is to it' and having the effect of "downplaying", which is exactly the opposite of the boasting tone mediated by *ne3*:

(55) Tāmen yào wǔbǎi kuài qián ne! Bù shì ge xiǎo shùmù!
3SG want 500 CL money ATT NEG be CL small sum
'They want (as much as) 500 dollars! That's not a small sum!'

(56) Tāmen yào wǔbǎi kuài qián bale! Méi yǒu shénme liǎobùqǐ!
3SG want 500 CL money ATT NEG have what extraordinary
'They (only) want 500 dollars! That's nothing extraordinary!'

The semantic import and the syntactic context of *ne3* is clearly different from that of *ne1* and warrants its status as an Attitude head. This further confirms the non-unitary approach to *ne*.

3.3. The Attitude head *ma*

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' (cf. Chao Yuen Ren's 1968: 801 term "dogmatic assertion"):

(57) 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)

(58) Wǒ shuō jīntiān shìxīngqīsān 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. among others Chao Yuen Ren 1968: 800–801, Zhu Dexi 1982: 211–213, Lü Shuxiang 2000: 375–376) and nicely illustrated by (77) with both SFPS in successive sentences. This invalidates Li Boya (2006: 64–65) who postulates a single *ma* "mark[ing] a high degree of the strength of the assertive or directive force".

3.4. The Attitude head *ei*

The Attitude head *ei* is presented as counterpart of ma_{Att} by Zhu Dexi (1982: 213), insofar as with *ei*, the speaker assumes the other person to *be* up to date concerning the matter at hand, but nevertheless issues a reminder:

(59) Jīntiān xīngqīsān ei!
today Wednesday ATT
Nǐ bié wàngle xiàwǔ děi shàng kè ei!
2SG NEG forget 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)

2.3.5. The Attitude head *ba*$_3$

The Att° head *ba*$_3$ is used to express 'uncertainty' It can co-occur with the Att° head *ne*$_3$, thus motivating the subdivision of the AttP as the topmost layer in the split CP (cf. Pan 2015: 853):

(60) [$_{AttP1}$ [$_{AttP2}$ [$_{TP}$ Xiǎowáng yě qù Fǎguó niàn shū] [$_{Att2°}$ ne]] [$_{Att1°}$ ba$_3$]]!
Xiaowang also go France study book NE BA
'Probably, Xiaowang went to study in France as well!'

2.3.6. The Attitude head *a*

The SFP *a* has 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, I gloss over these phonological alternations and use the transliteration *a* throughout.

The SFP *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. among others Chao Yuen Ren 1968: 803–806; Zhu Dexi 1982: 212, Li and Thompson 1981: 313–317). 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.

(61) 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 SFP *a* has less the flavour of a command than an imperative without it (though according to Chao Yuen Ren [1968: 804] the softening effect with *a* is less strong than with the advisative *ba*$_{IMP}$ discussed above):

(62) Shuō a, bié hàipà a!
say ATT NEG be.afraid ATT
'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.:

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

Finally, *a* is also compatible with rhetorical questions (cf. Victor Junnan Pan 2015: 855, (66)):

(64) Sheí bù xǐhuan chī tílāmǐsū a?!
who NEG like eat tiramisu A
'Oh, who doesn't like tiramisu?! = Everyone likes tiramisu!'

2.4. Wrap-up

The strict ordering observed by Zhu Dexi (1982, ch. 16) for the three classes of SFPs can be easily recast as a split CP à la Rizzi, *modulo* the addition of the projection AttitudeP (absent from Rizzi's original hierarchy) above ForceP. Importantly, studies on Romance and Germanic

languages within Rizzi's split CP approach independently argue for the necessity of such a speaker/hearer related projection: 'TP < low CP < ForceP < AttitudeP'

SFPs are clearly heads, because they impose selectional restrictions on their clausal complement (such as declarative or interrogative sentence type). In the case of low C, the acceptability of a given TP as complement also depends on the properties of the extended verbal projection such as its aktionsart.

The detailed study of *ne* has illustrated several problems encountered in the analysis of SFPs in general, among them the homophony between C-elements instantiating different projections SFPs such as *ba*$_{\text{IMP}}$ and *ba*$_{\text{Qconfirmation}}$ reveal another difficulty, namely the homophony between SFPs belonging to the same projection, in this case ForceP.

The decision to be made for homophonous items is further complicated by the interaction between the SFPs, the sentence meaning itself, the sentence intonation and the context, all of which contribute to the interpretation obtained. As a consequence, it is not always easy to pin down the meaning component provided by the SFP itself. Besides, the use of SFPs, especially those realizing AttitudeP, is also subject to individual and regional differences which still remain to be elucidated. (In general, Northern speakers seem to use SFPs more frequently than Southern speakers.) These caveats notwithstanding, it is evident that SFPs are an integral part of the syntax and as such subject to syntactic constraints, the most visible being the hierarchy of the different projections reflected in their rigid order..

3. *Complementisers and root vs non-root contexts*

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, as in the case of the Force heads *ma* (cf. Li and Thompson 1981: 557, Tang Ting-chi 1988: 363) and *ne* (cf. Cheng Lisa Lai-Shen 1991, Y.-H. Audrey Li 1992: 153).

One of the important results of taking into account the systematic root vs non-root asymmetry is that Chinese C-heads show a complex feature bundle (contra Huang/Li/LI (2017: 35) on a par with Cs in non-isolating languages. Another important finding is that Chinese also has exclusively non-root Cs.

3.1. Root-only complementisers (Force° and Attitude°)

As noted by Li & Thompson (1981: 556–557) and (Tang Ting-chi 1988: 363), the *yes/no* question particle *ma* cannot be part of an embedded clause, but must always be construed as belonging to the matrix sentence. This is straightforward in (65a): a sentential subject cannot contain *ma*; instead, the 'A-not-A' question form must be used here (cf. [65b]):

(65) a. *[$_{\text{TP}}$[$_{\text{ForceP}}$ [$_{\text{TP}}$ Tā lái] ma] méi yǒu guānxi]
3SG come FORCE NEG have relation

b. [$_{\text{TP}}$[$_{\text{TP}}$ Tā lái bù lái] méi yǒu guānxi]
3SG come NEG come NEG have relation
'Whether or not he comes doesn't matter.'

By contrast, in (66a), where the final position of the root clause coincides with the final position of the clausal complement, this 'root only' constraint must be deduced from the interpretational possibilities. In (66a), *ma* can only question the root clause, not the clausal complement. In the case of an interrogative clause as complement, again only the 'A-not-A' question is acceptable (cf. [66b]).

(66) a. [ForceP[TP Tā bù zhīdao [TP Mǎlì lái]] ma]?
3SG NEG know Mary come FORCE
'Doesn't she know that Mary is coming?'
[Excluded: 'She doesn't know whether or not Mary is coming.']

b. [TP Tā bù zhīdao [TP Mǎlì lái bù lái]]
3SG NEG know Mary come NEG come
'She doesn't know whether Mary is coming or not.'

The same root-only constraint also holds for Force and Attitude heads (cf. V. J. Pan 2015: 842):

(67) a. Wǒmen yīqǐ qù baIMP
1PL together go FORCE
'Let's go there together.'

b. Wǒmen yīqǐ qù (*baIMP) de yīyuàn bù yuǎn
1PL together go FORCE SUB hospital NEG far
'The hospital where we went together is not far.'

(68) [TP[TP Tā lái bù lái (*ne)] méi yǒu guānxi]
3SG come NEG come ATT NEG have relation
'Whether or not he comes doesn't matter.'

The unacceptability of Force heads points to the lack of the relevant projection in embedded contexts, because an interrogative sentence *per se* is not excluded, as evidenced by the well formedness of sentential subjects and clausal complements with A-*bù*-A questions. *A fortiori*, there can be no projection AttitudeP, either; in addition, embedded contexts seem to be semantically incompatible with speaker and hearer-related dimensions conveyed by Att°.

3.2. Low C in root and non-root contexts

Low Cs are acceptable in embedded contexts such as clausal complements (cf. [69]), sentential subjects (cf. (70]), noun complement clauses (cf. [71]) and relative clauses (cf. [72]):

(69) [TPNǐ wèishénme méi gàosù wǒ [ClowP[TP tā bù qù Aòdàlìyà] le]]?
2SG why NEG tell 1SG 3SG NEG go Australia CLOW
'Why didn't you tell me that she no longer wants to go to Australia?'

(70) [TP[ClowP[TP Tā bù qù Aòdàlìyà] le] bù suàn shénme xīnwén]
3SG NEG go Australia CLOW NEG count what news
'That she no longer wants to go to Australia is no real news.'

(71) a. [DP [ClowP[TP Bālí xià xuě] le] de xiāoxi]
Paris fall snow CLOW SUB news
'the news that it is snowing in Paris'

b. [ClowP[TP Bālí xià xuě] le]
Paris fall snow CLOW
'It is snowing in Paris.'

(72) #[DP[ClowP[TP Gāngcái dǎ diànhuà] láizhe] de rén] dàodǐ shìshéi?
just strike phone CLOW SUB person in.fact be who
'Who in fact was the person that called just now?' (Victor J. Pan 2015: 834)

Note first that the acceptability of *láizhe* in non-root contexts is subject to variation (indicated by '#'), because (72) was accepted only by speakers from Northern China. By contrast, the judgements for *le* in non-root contexts are more homogeneous. In (71a) the presence of *le* was accepted and for some speakers even preferred in order to "anchor" the event, on a par with the function of *le* in the matrix clause (cf. [71b]). In (69) and (70), the presence or absence of *le* is associated with an interpretational difference for the embedded clauses, *viz* 'she no longer wants to go to Australia' (with *le*) vs 'she doesn't want to go to Australia' (without *le*).

To sum up, only low C can occur in both root *and* non-root contexts; the acceptability in non-root contexts is, however, subject to constraints whose nature still needs to be determined.

3.3. Exclusively non-root Cs

The issue of exclusively non-root C has not received any attention in the literature, which is not surprising insofar as the fundamental character of the root vs. non-root asymmetry in the Chinese C-system has not been acknowledged, either.

3.3.1. The exclusively non-root C *de*

De in the so-called *propositional assertion construction* (cf. Paul and Whitman 2008) is a non-root C: the copula *shì* 'be' selects a complement headed by *de* which in turn takes as its complement a non-finite TP, in other words, *de* is obligatory here. As indicated by the addition of 'it is the case that…' in the translation, this construction is used in order to strengthen the assertion of the sentence as a whole, thus different from *shi…de* focus clefts (cf. P&W 2008):

(73) Wǒ$_i$ shì[$_{CP(-root)}$[t$_i$ cónglái bù chōu yān] de]
1SG be ever NEG inhale smoke C(-root)
'(It is the case that) I have never smoked.'

(74) Tā$_i$ shì [$_{CP(-root)}$[t$_i$ yīdìng huì [$_{PP}$ duì nǐ] hǎo yī bèizi] de]
3SG be certainly will towards 2SG good 1 generation C(-root)
'(It is the case that) he will certainly be good to you for an entire lifetime.'
(Li, Thompson, and Zhang 1998: 94,[C]; bracketing supplied)

(75) [$_{TopP}$[$_{DP}$ Zhèi ge dōngxī]
this CL thing
[$_{TP}$ tā$_i$ shì[$_{CP(-root)}$[t$_i$ yīnggāi bān -de -dòng t$_{DP}$] de]]]
3SG be ought remove-able-move C(-root)
'This thing, he should indeed be able to move it.'

The non-finite character of the TP selected by the non-root C *de* is evidenced by the obligatory raising of the subject to the matrix subject position, i.e. preceding the copula *shì*. Furthermore, topicalization of a phrase from the non-root CP in the propositional assertion construction is possible as well (cf. [75], [76]). This clearly contrasts with the non-extractability from a relative clause (cf. [77b]), irrespective of the presence or absence of the NP-complement of *de*, here *rén* 'person' (For further discussion, cf. Paul and Whitman 2008: section 6.3). These differences in extraction confirm the analysis of *de* in the nominal projection 'XP *de* NP' as a nominal head, not a (non-root) C (contra Cheng 1986)

(76) [$_{TopP}$[$_{PP}$ Duì nǐ] [$_{TP}$ tā shì [$_{CP(-root)}$[yīdìng huì t$_{PP}$ hǎo yī bèizi] de]]]
towards 2SG 3SG be certainly will be.good 1 lifetime C(-root)
'(It is the case that) he will certainly be good to you for an entire lifetime.'

(77) a. Tā hèn [$_{DP}$ [$_{TP}$ Ø$_i$ [$_{PP}$ duì nǐ] huì hǎo yī bèizi] de (rén$_i$)]
3SG hate towards 2SG will be.good 1 lifetime SUB person
'He hates people/those who will be good to you for an entire lifetime.'

b. *[$_{TopP}$[$_{PP}$ Duì nǐ][$_{TP}$ tā hèn [$_{DP}$[$_{TP}$ Ø$_i$ huì t$_{PP}$ hǎo yī bèizi de] (rén)]]]
towards 2SG 3SG hate will be.good 1 lifetime SUB person
(*'[To you]$_i$, he hates people/those who will be good t$_i$ an entire lifetime.')

Analysing *de* in the *propositional assertion* construction as the head of the projection selected by the matrix verb *shì* 'be' allows us to correctly predict the unacceptability of SFPs within DeP (cf. [78]). Being the clausal complement of the matrix verb *shì* 'be', DeP is in an embedded context, where only one C-layer is allowed, not a multi-layered split CP.

(78) [$_{ClowP}$ [$_{TopP}$ [Zhèi ge dōngxī]$_j$ [$_{TP}$ tā$_i$ shì[$_{CP(-root)}$[t$_i$ yīnggāi
this CL thing 3SG be ought
bān -de -dòng t$_j$ (*le)] **de**]]] **le**].
remove-able-move CLOW C(-root) CLOW
'This thing, he should indeed be able to move it.'

Once we acknowledge that *de* in the propositional assertion construction heads the complement embedded under the matrix verb, we can account for the co-occurrence of this *non-root* C *de* with a low *root* C (e.g. *le*) construed with the matrix clause, resulting in the order *de le*:

(79) [$_{ClowP}$[$_{TP}$ Wèntí$_i$ xiànzài[shì [$_{C(-root)}$ t$_i$ néng jiějué **de**]]] **le**]
problem now be can solve C(-root) CLOW
'The problem can certainly be solved now.'

The co-occurrence of the low C *le* with *de* would not be possible if *de* were a low *root* C on a par with *le* and likewise construed with the matrix clause, because SFPs instantiating the same projection are in a paradigmatic relation to each other and mutually exclusive. Given that *le* instantiates the lowest C projection in the split CP, it cannot be preceded by any other root C.

3.3. The exclusively non-root C *dehuà*

Dehuà heading conditional clauses is another non-root C. In Chinese, conditional clauses are analysed as clausal topics located in Spec,TopP (cf. Gasde & Paul 1996, Pan & Paul 2018):

(80) [$_{ClowP}$[$_{TopP}$[$_{C(-root)}$ Mǎlì jīntiān líkāi Běijīng (*le) dehuà]
Mary today leave Beijing CLOW C(-root)
[$_{TP}$ tā hěn kuài jiù yào dào]] le]
3SG very fast thenwill arrive CLOW
'If Mary has left Beijing today, then she should be here very soon.'

(81) [$_{TopP}$[$_{CP(-root)}$[Xià yǔ (*le)] dehuà] [$_{TP}$ wǒ jiù bù qù]]
fall rain CLOW C(-root) 1SG then NEG go
'If it rains, then I won't go.'

Again, no SFPs are allowed within the projection headed by *dehuà*, exactly as in the case of the projection headed by *de* in the propositional assertion construction.

4. Conclusion

SFPs have been demonstrated to be complementisers and to realize the heads of three projections in the rigidly ordered split CP 'Low CP < ForceP < AttitudeP'. Importantly, this split CP only exists in root contexts, whereas in non-root contexts at most one C is allowed, if at all. More precisely, C-elements acceptable in non-root contexts are restricted to low C (*láizhe, le, ne1*), to the exclusion of the Force and Attittude heads. In addition, this section has

identified the so far neglected exclusively non-root C-elements *de* in the propositional assertion construction and *dehuà* heading conditional clauses. Importantly, the so-called subordinator *de* in modification structures 'XP *de* NP' (where in addition to clauses, XP includes any kind of modifier: NP, DP, QP, AdpositionP, AdjectiveP) is not a C-element, but instead instantiates different heads on the D-spine, comparable to English *of* and possessive *'s* (cf. Paul 2017).

The root vs. non-root asymmetry observed in the Chinese C-system implies that along with other features, SFPs also have to be specified for the feature [±root]. With respect to their complex feature bundles, Chinese SFPs are therefore on a par with complementisers such as English *that* and *if*, which besides features such as Force (declarative or interrogative, respectively) also encode [-root], thus challenging 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.

This "syncretic" character makes it impossible to dismiss Chinese SFPs as "categorially deficient" (cf. among others Toivonen 2003; Biberauer, Newton, and Sheehan 2009), where this dismissal is motivated by the intention to maintain the cross-categorial generalization associating sentence-final position of particles exclusively with OV languages; the latter is one among the many harmonious correlations in typology recast as deriving from the *Final-over-Final Condition* (cf. Sheehan, Biberauer, Roberts & Holmberg 2017)

5. The acquisition of the different heads in the Chinese split CP

TAO Yu (2012) sets the onset for the productive use of SFPs at the age of 01;07 and reports the spontaneous use of the following SFPs before the age of two years by the four children examined: the low C *ne*$_1$ and the Attitude *ne*$_3$, the Force head *ma* (*yes/no* question) and the "dogmatic assertion" Attitude head *ma*, the two Force heads *ba*, i.e. advisative *ba* in imperatives and the confirmation request question *ba*. The acquisition of the appropriate prosodic features seems more complex, (cf. Yang Yu'an 2012).

(82) – (86) show a sample of the sentences produced by the children (cf. Tao Yu 2012: 29-34)

(82) XXX, wǒ zài nǎr ne? (CY 01; 11; 17) (playing hide and seek with the interviewer XXX)
1SG be.at where ATT
'XXX, where am I?'

(83) a. Bèng wán'r le! (Adult)
NEG play CLOW
'Do no longer lay!' = 'Stop playing.'

b Hē shuǐ ne (SJQ 01; 07; 16)
drink water ?CLOW/ATT?
'I'm drinking water right now.'

(84) Chī táng ba (ZTX 01;08; 18)
eat candy FORCE
'(Let me) have some candy.' (*ba* = softened imperative)

(85) a. Nǐ kàn bù shì huǒchái (Adult)
2SG see NEG be match
'You see, it is not the matches (that set the fire).'

b. Shi huǒchái ma (SJQ 01/ 10; 22)
be match ATT
'It IS the matches (that set the fire).

(86) a. Bu xǐhuān chī táng, shì bù shì?
NEG like eat candy be NEG be
'You don't like to eat candies, do you?'

b. Chī táng ma (ZTX 01;08; 24)
eat candy ATT
'Naturally I eat candies!'

Guo (2016) and Peng (2016) report similar results from three Beijing Mandarin-speaking children aged between 1;3 and 3;1;in general, SFPs are acquired by the age of 2 years. (87-88) below show a sample of the sentences produced by the children (Peng 2016: 118-119):

Child WYF:

(87) a. Hǎo chǒu a ! (1;09;15)
so ugly ATT
'(This) is so ugly!'

b. Wán jīmù ba (1;09;01)
play block FORCE
'Let us play with blocks.'

c. Dā shāfā ba (1;09;08)
put sofa FORCE
'Let's put it on the sofa.'

d. Wán jīmù ne (1;09;15)
play block CLOW
'I'm playing with blocks.'

e. Yú zài nǎr ne ? (1;09;22)
fish be.at where ATT
'And where's the fish ?'

f. Māma zài zhè ma ? （1;10;16）
mum be.at here FORCE
'Is mum here?'

Child ZZ:

(88) a. Shǒujī a. （1;10;27）
cell.phone ATT
'The cell phone !'

b. Lí a （1;11;23）
pear ATT
'The pear !'

c. Tuī ba. (2;00;07)
push FORCE
'Push.'

d. Zǒu ba. (2;00;07
go FORCE
'Let's go.'

e. Wǒ zhǎodào māma le. (cf. (25), p. 7 above)
1SG find mum CLOW
'I have found mum.'

The early acquisition of SFPs might challenge the assumption made in Friedmann/Belletti/Rizzi (2020) that acquisition is "incremental" and proceeds layer by layer "up the tree", first the TP and then the periphery (but cf. (88a-b) vs (88c-d)). More precisely, the periphery is claimed to be acquired in "zones", where no zone can be "skipped". Does the more or less simultaneous acquisition of low C, Force head and Attitude head imply that the split CP is acquired in "one fell swoop" and that accordingly it counts as one zone? Note though, that the topic projection and the *lián* 'even' focus projection hosting XPs (DPs and clauses), not heads, in the sentence periphery would need to be included as well.

Citation from Friedmann/Belletti/Rizzi (2020: § 5.2.1.):
"We found that the acquisition of the various heads [in Hebrew] follows strict principles:
a) They are acquired according to their position in the cartographic tree, where higher layers are acquired after lower ones. There is no head-skipping – a higher layer (which in traditional terms would be defined by an X-bar projection of a certain head) cannot be acquired before all lower layers are acquired.
b) Whereas it would be imaginable that children would gradually increase their ability to hold more and more layers, head after head, this is not what we have seen. Our data crucially indicate that the functional heads are acquired in "zones" or "fields", where several hierarchically ordered sets of functional heads are acquired together. This empirical finding supports the view that the LP is organized into sub-fields (see Benincà & Poletto 2004). Similarly to the no-layer skipping, there can also be no zone-skipping – a higher zone cannot be acquired before all lower ones are acquired.
The empirical evidence provided by acquisition identifies different stages, corresponding to different zones. The first to be acquired is the IP zone, then the LP is acquired in two steps, defining two zones: first a lower LP zone including Fin, Mod, and Q and then a higher LP zone that includes Force, Int, and Top.
In addition to providing new evidence for the split of the LP in different fields, our data provide new evidence for the major divide between an inflectional system (IP) and a left-peripheral system: our Stage 1 is characterized by the presence of the IP system, whereas the left peripheral system has not developed yet.
Whereas the IP-CP distinction is quite generally assumed, the further distinction between the two LP zones suggests a novel look from acquisition to theoretical discussion: it suggests that each of the two LP zones forms some sort of relatively independent organized unit. This opens an interesting question of what makes several layers form a zone together, and what dictates the exact point where one zone ends and the next begins. The sub-division of the LP is in fact reminiscent of attempts of identifying distinct LP fields hierarchically organized (such as a topic field vs. a focus field etc., as in e.g., Benincà & Poletto 2004). We just notice that it is not straightforward to identify the property defining the upper zone of the LP as a natural class (e.g., as the "topic field" terminology would suggest) because it includes topics, force markers (embedding markers), and operators such as yes/no operators (in embedded questions), relative clause operators, and *why*, creatures of very different natures. Furthermore, it would be interesting to see if this division also has a phase correlate, an issue that we leave for future research."

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