Peripheral Functional Projection encoded Finiteness in Mandarin Chinese

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BACKGROUND: Contrary to Indo-European languages, which encode finiteness through the morphological system, Mandarin Chinese instantiates languages lacking temporal and person/number inflections on T but still equipping finite/non-finite distinction (Grano 2017, Zhang 2019, Rouveret 2023, a.o.), requiring an alternative account. In a broad sense, finiteness can be regarded as a property, which enables a clause to stand alone as a syntactically unembedded assertion (Grano 2017). Traditional Chinese grammar refers to non-finite clauses as "incomplete sentences" given that clauses of this type sound "incomplete" to native speakers, and that they cannot be used as independent sentences. Many grammatical elements can help "complete" non-finite clauses in Chinese, such as certain types of modal verbs and adverbs occurring inside TP. The present study only focuses on how categories in the CP layer can provide TP with finiteness.

PREVIOUS APPROACH: In Mandarin, different types of Sentence-Final Particles (SFP) head independent functional projections in the left-periphery, and they are organized in a strict hierarchical order (Paul & Pan 2016, 2017; Pan 2015, 2019): TP < S.AspP (sentential aspect, e.g., láizhe, le, ne) < OnlyP (sentential exclusive focus, e.g., éryĭ) < iForceP (illocutionary force, e.g., ma, ba) < SQP (special questions, e.g., negative wh-word shénme 'what') < AttitudeP (speaker's attitude, e.g., a, bei). Importantly, Zhang (2019) argues that certain low SFPs (S.AspP) head a FinP in the sense of Rizzi (1997); however, the properties of higher SFPs (e.g., iForceP, AttP) and their roles for finiteness have not been discussed.

MAIN PROPOSAL: We will argue that FINITENESS and TENSE are in fact two obligatory but independent factors which make a clause independent in Chinese. In other words, a finite clause in Chinese should contain a valued T head; a category with [+FIN] can provide a clause with finiteness, and this category can be a functional projection in the CP layer. We will show that all the functional heads in the CP-layer possess [+FIN] feature (not only low SFPs), among other discourse-related features, such as [+INTERROGATIVE], and that some of these heads (not all of them) also possess a valued T feature: C [+FIN; ±T]. When a TP merges with a C head, if T is valued, C can provide the TP with finiteness, and the derivation converges. If T is unvalued, we have to examine whether this C head possesses a valued T feature: if yes, C can pass the value of its T-feature to T; otherwise, the derivation crashes due to the lacking a valid value on T. Different scenarios are illustrated in the following table and the tree.

CP		TP	DERIVATION	EXAMPLE				
	[+FIN]	[+T]	[T:VAL]	✓	(1b)	C	TP	
	[+FIN]	[+T]	[T:]	✓	(3b); (4); (8b)	[+FIN]		
	[+FIN]	[-T]	[T: VAL]	✓	(6b)	[+T]	Τ .	
	[+FIN]	[-T]	[T:]	X	(5)		[T:]	

ARGUMENT 1: Despite the claim that finiteness in Chinese is achieved through the valuation of T head (Tsai 2008, a.o.), (cf. 1a), which has, inter alia, a deictic temporal expression, cannot make a clause stand alone, suggesting that even if a T head is valued, it does not bring out finiteness. (1a) with a valued T but lacking category with [+FIN] is judged as an "incomplete sentence Θ " by our informants. The grammaticality of (1b) suggests that finiteness is separated from TP and can be encoded by the *yes-no* question particle *ma*, which possesses [+FIN].

(1) a. S Zhāngsān **gāngcái** zuò-zhe. (judged as an incomplete sentence by our informants) Zhangsan just.now sit-DUR ('Zhangsan was sitting just now.')

b. © [¡ForceP=CP [TP Zhāngsān gāngcái zuò-zhe] ma]? (✓ [C [+FIN, -T]...T [T: VAL]])

Zhangsan just.now sit-DUR Qyes-no 'Was Zhangsan sitting just now?'

ARGUMENT 2: Apart from sentential aspects, i.e., láizhe, le, and ne, which have been argued by Zhang (2019) to carry the finiteness property, any functional head regardless of its hierarchical position in the left-periphery is capable of giving finiteness to a TP if the T is valued ([C [+FIN, ±T]...T [T: VAL]]): yes-no question ma at iForceP (1b, 2c), the negative question word shénme at

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SQP (2b), éryĭ at OnlyP (2c), and the attitude particle bei at AttP (2c).
(2) a. 😕 [TP Lǐsì shàng-cì kǎo-de-hǎo].
                                           b. © [SOP=CP Shénme [TP Lisi shàng-cì kǎo-de-hǎo]]
            Lisi last.time test-DE-good
                                                         what
                                                                    Lisi last.time test-DE-good
      Int.: 'Lisi did well in the exam last time.' 'It is not true that Lisi did well in the exam last time.'
   c. © [OnlyP/iForceP/AttP=CP [TP Lisi shang-ci kao-de-hao]
                                                                érvĭ / ma
                               Lisi
                                     last.time test-DE-good only Q<sub>ves-no</sub> BEI<sub>Att</sub>
          with éryǐ: 'Lisi just did well in the exam last time.'; with ma: 'Did Lisi do well in the
          exam last time?'; with bei: 'Obviously, Lisi did well in the exam last time!'
ARGUMENT 3: If the T head is unvalued, i.e., no specified reference time, certain C heads such as
the high attitude-related particle ba, which conveys probability, can assign a value to T. (3a)
instantiates that a non-finite clause with no specified tense could obtain a habitual or a
future/intentional reading from ba (cf. 3b). Meanwhile, ba provides the clause with finiteness.
                                             b. © [AttP=CP [TP Zhāngsān hē
(3) a. \otimes Zhāngsān hē
                        kāfēi.
                                                                              kāfēi] ba]].
        Zhangsan drink coffee
                                                             Zhangsan drink coffee BAAtt
        Int. 'Zhangsan drinks coffee.'
                                                  'Probably, Zhangsan drinks coffee.'
Regarding the ability of assigning a value to an unvalued T, different types of C-heads do not
behave uniformly. Low C, related to sentential aspects, can assign a value to T, e.g., láizhe
indicates the recent past and provides T with a past value, as in (4a). Middle-layered and some
high functional heads can give a default habitual or irrealis reading to the sentence and, hence,
values T, such as ma (cf. 1b, 2c), the probability ba (3b), the negative wh-word nălĭ (cf. 4b). If
both T and C have tense value, the value on T determines the tense of the sentence, as in (1b).
(4) a. © Xiǎolǐ hē kāfēi láizhe.
                                               b. © Xiǎolǐ nǎlǐ
                                                                      hē
                                                                               kāfēi?!
        Xiaoli drink coffee LAIZHE<sub>S.Asp</sub>
                                                     Xiaoli Neg.O
                                                                      drink
                                                                               coffee
        'Xiaoli was drinking coffee just now.'
                                                    'It's not true that Xiaoli drinks coffee!'
However, SFPs heading OnlyP conveying the sentential exclusive focus reading, such as éryĭ in
(5a) and certain highest SFPs expressing speaker's subjective attitude, such as bei in (5b) lack a
tense value and cannot pass any value to an unvalued TP. Although these SFPs possess [+FIN],
they cannot license sentences with an unvalued T: x[C [+FIN, -T]...T [T: ]]. By contrast, these
SFPs can license a TP if T itself is valued: ✓[C [+FIN, -T]...T [T: VAL]], (cf. 6).
(5) a. S Zhāngsān hē
                           kāfēi éryĭ.
                                              b. B Zhāngsān hē kāfēi
          Zhangsan drink coffee only
                                                    Zhangsan drink coffee BEIAtt
                                                    Int.: 'Obviously, Zhangsan drinks coffee.'
          Int.: 'Zhangsan just drinks coffee.'
(6) a. B Wŏ zuótiān
                          gănmào.
                                              b. © Wŏ zuótiān
                                                                      gănmào
          I yesterday
                          have.a.cold
                                                          yesterday have.a.cold only
                                                    Ι
          Int: 'I had a cold yesterday.'
                                                   'I just had a cold yesterday (not a big deal).'
ARGUMENT 4: Not only SFPs can encode finiteness, other categories in the CP layer also can. (7)
shows that adverbs such as yībānláishuō 'generally speaking' can occur in the CP layer. In (7),
the progressive SFP ne can only be construed under the scope of yībānláishuō, which gives rise
to the correct reading "Xiaoming is normally asleep at this moment". By contrast, the sentence is
uninterpretable if ne takes scope over the adverb yībānláishuō. Hence yībānláishuō could occupy
the specifier of a functional projection above TP, in the sense of Cinque (1999).
(7) a. [Mood.epistemic Yībānláishuō, [S.AspP=CP [TP Xiǎomíng zhè-ge diǎn shuìjiào] ne]].
                                            Xiaoming this-Cl time sleep
             generally.speaking
                                                                                NE<sub>S.Asp</sub>
       'Generally speaking, Xiaoming is sleeping at this moment.'
   b. *[S.AspP [Mood.epistemic Yībānláishuō,
                                           [TP Xiǎomíng zhè-ge diǎn shuìjiào]] ne]
                          generally.speaking Xiaoming this-Cl time sleep
(8) reveals that the functional projection hosting this epistemic adverb may also encode finiteness
and possess a valued T feature, which provides the sentence with a habitual reading.
                                           b. © Yībānláishuō,
(8) a. <sup>(3)</sup>Lĭsì
                 zuò
                          fēijī.
                                                                      Lĭsì
                                                                               zuò
                                                                                        fēijī.
        Lisi
                 take
                          plane
                                                generally.speaking
                                                                      Lisi
                                                                               take
                                                                                        plane
        Int.: 'Lisi travels by plane.'
                                                'Generally speaking, Lisi travels by plane.'
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