Initialness of Sentence-final Particles in Mandarin Chinese*

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Abstract. This paper gives a thorough investigation into Mandarin sentence-final particles (henceforth SFPs). First I induce core grammatical functions and semantic interpretations of SFPs. Based on Rizzi's (1997) Split CP hypothesis, I make some modifications to accommodate Mandarin SFPs and map them onto separate functional heads within a proper hierarchy. I also examine some empirical evidence of head directionality and tentatively assume Mandarin C is head-initial. To explain the surface head-final order, in light of Chomsky's (2001) Phase Theory and Hsieh's (2005) revised Spell-out hypothesis, I pose a CP complement to Spec movement. Following Moro's (2000) idea, I further claim the motivation behind is to seek for antisymetry.

Keywords: Sentence-final particles, Split CP, Head-directionality, LCA, Antisymmetry, Phase,

1. Functions and Interpretations of SFPs

Based mainly on the studies of Li and Thompson (1982), Chu (1999), and Li (2006), I induce core functions and meanings of the most common SFPs and summarize in the following table with relevant examples given immediately below:

Table 1: Core functions and meanings of SFPs

SFP	Core function and meaning
le	Sentential *le*, differing from aspectual *le*, denotes a "change-of-state," suggesting a previous state changes to the very state to which the sentence ending with *le* refers.
ne	*ne* is closely related to expression of "relevance" and functions as a topic marker.
ba	*ba* lowers the strength of a sentence and display speaker's uncertainty.
a	Normally, *a* reduces forcefulness of the message, as in imperatives or interrogatives.
ma1	*ma*1 marks a high degree of the speaker's commitment to the assertion or the speaker's intension to have an action fulfilled in imperative sentences.
ma2	*ma*2, though still controversial, is mostly analyzed as a yes-no question particle.
ou	*ou* implies a friendly warning showing concern and caring on the part of the speaker.

(1) a. hua hong le.
flower red SFP
'The flower becomes red.'

b. ta zhidao zhe jian shi le.
he know this Cl. incident SFP
'He knows the incident (now).'

(2) a. ta you san bu che ne!
he have three Cl. car SFP
'He has three cars!'

b. wo xihuan zhe bu dianying, ni ne?
I like this Cl. movie you SFP
'I like this movie, how about you?'

(3) a. zhe fu hua bucuo ba./?
this Cl. panting good SFP
'This panting is good. / (right)?'

b. haohao nianshu ba!
hard study SFP
'Study hard, (okay)?'

c. ni hui kaiche ba?
You can drive SFP
'You can drive, can't you?'

(4) a. guolai a!
come SFP
'Come.'

b. shei a?
who SFP
'Who?'

(5) a. wo shuo jintian shi zhouri ma1.
I say today is Sunday SFP
'I said today is Sunday!

b. zai he yi bei ma1!
more drink one glass SFP
'Have one more glass (of wine)!'

(6) ni shi xuesheng ma2?
you are student SFP
'Are you a student?'

(7) xiaoxin ou!
careful SFP
'(Please) be careful!'

2. Structural Mapping of SFPs

Though it is safe to claim that SFPs are the heads of functional projections in CP domain, it is improper to consider that they all occupy the head C position as Mandarin allows sentence-final particle cluster, as in (8).

(8) hua hong le a./?
flower red SFP SFP
'The flower becomes red./?'

Rizzi's (1997) Split CP hypothesis provides a fascinating framework here.

(9) Split CP Hypothesis (Rizzi,1997)
[Force Topic* Focus Topic* Fin]

The system is delimited upward by Force, the head encoding "clausal typing" (Cheng, 1997) information; downward by Finiteness, the head differentiating finite and non-finite constructions. Topic and Focus are dedicated to topical and focal interpretations, respectively.

However, this CP system might need some minor modifications to accommodate Mandarin final particles.

According to Li's (2006) proposals, Force should be further split into two distinct heads: Force and Mood. Force head here represents illocutionary force and conveys speech-act information. Mood head instead encodes clause-typing information. This being so, *ma*2 as a question particle, though debatable, would belong to Mood.

Haegeman (2002) supports the analysis with evidence. She argues that every clause needs to be typed, but not every clause conveys illocutionary force. For instance, she contends that while matrix clauses are almost always associated with an illocutionary force, embedded clauses are not. Moreover, she finds evidence that "Force," may occupy a lower position than other functional heads such as Topic and Focus. If Li's proposal is right, then, we can maintain Rizzi's assumption that Force is in the highest position and it is Mood that occupies the lower position. And we reach the following hierarchy:

(10) Force > Mood > Fin

Furthermore, following Li (2006), "Degree" is introduced. She argues that Degree head like *ba* and *ma*1 marks scales sentence force. In declarative sentence, with *ba* the speaker is not certain about the factual status of the proposition, whereas with *ma*1 the speaker has a firm judgment. In imperatives and interrogatives, *ba* marks a low degree of the strength of the

speaker's intention to have an action carried out or to have the hearer provide an answer and *ma*1 a high degree. Besides, since *a* and *ou* function to strengthen or reduce sentence force as well, they may occupy Degree head position. In short, we can conjecture that Degree is above Force and arrive at the following hierarchy:

(11) Degree > Force > Mood > Fin

Soh and Gao (2004) argue that sentential *le* can be characterized as a "transition marker." Based on them, I call the head position in which it is generated "Trans(ition"). Besides, *le* always follow other SFPs when they co-occur, as in (8). If Chinese CP system is head-initial, which will be discussed later, we might well contend that *le* is structurally the lowest among the SFPs. And the hierarchy in question now extends as below:

(12) Degree > Force > Mood > Trans > Fin

Since *ne* functions to highlight relevance of an utterance and serves as a topic marker, I allocate it to Topic head position. Given Rizzi's (1997) split CP, Topic is located between Force and Finite. Topic must be higher than Trans because as just assumed *le* is the lowest among the SFPs. However, as no enough evidence testifying the relevant order between Topic and Mood in Chinese, I tentatively assume the following structure:

(13) Degree > Force > Mood, Topic > Trans > Finite

Mapping all the final particles onto (13), we ultimately derive a complete hierarchy of SFPs:

(14) Structural mapping of SFPs in Chinese

Degree	>	Force	>	Mood, Topic	>	Trans	>	Finite
ba, ma1, a, ou				*ma2*		*ne*		*le*

3. Evidence for and against the Initialness Hypothesis

I will first examine some of the evidence provided by Hsieh (2005).

Hsieh (2005) proposes that embedded complementizer *shuo* is head-initial since it precedes its TP complement, as Taiwanese *kong* does, according to Simpson and Wu (2002).

(15) a. wo xiang [CP shuo [TP t ta shi taipei ren]]
I think Comp. he is Taipei person
'I think (that) he is a Taipeier.'

b. wa xiong [CP kong [TP yi shi taipak lang]]

I think Comp. he is Taipei person
'I think (that) he is a Taipeier.'

Nonetheless, the claim is weak as the type of sentence is widely argued to be a dialect of Taiwan Mandarin. That is, it could be a product under the influence of Taiwanese *kong*.

Hsieh (2005) further conjectures the fact that a topicalized wh-word licenses a parasitic gap substantiates the claim that topicalized elements move to the "left" periphery.

(16) [CP sheme dongxii，[TP ni mai le PGi jiu hui iong ti]]
what thing you buy ASP then would use
'What thing would you use if you buy?'

However, Tsai (1997b) contends that Chinese topicalization involves base-generation but not movement. To be specific, a null operator is directly merged in Spec-CP, turning its c-command domain into a predicate, predicating of the parallely base-generated topic occupying Spec-TopP. The topic serves to identify the null operator, which in turn controls the empty pronoun in the seeming gap in the comment clause. The evidence comes from the following sentence in which no Complex NP Constraint (CNPC) effect is detected.

(17) [Top Akiui (a)], [CP OPi [DP xuduo [CP ei chuban ej] de shuj] dou mai-de bu-cho.]
Akiu Topic many publish PNM book all sell—DE not-bad
'Akiu, many books which (he) published sell well.'

Finally, Hsieh (2005) poses a "CP-sandwiched TP" phenomenon which he believes to confirm the head-complement order, as in (19):

(18) [C2P [C1P ruguo [TP ni bu chifan]] dehua tC1P] , …
if you not eat-meal if
'If you don't have meals, …'

However, a head-final CP system could also reach the same outcome, shown as below:

(19) [C2P tC1P ruguo [C1P [TP ni bu chifan] dehua]]

Besides, suppose C2 has a feature, assuming it is EPP, which triggers movement, then why TP does not move to [Spec, C1P]? If XP-movement is EPP-driven, we will expect that every C bears an EPP feature. If we are to stipulate that C2 has an EPP while C1 does not, it would be too costly and ill-motivated. Therefore, a feature-driven approach is not favored.

Despite the failure mentioned above, I would tentatively assume Mandarin CP is head-initial. The analysis has an appealing merit, for it gives a uniform account for Chinese phrase structure, as exemplified below:

(20) a. DP, Num(ber)P, and Cl(assifier)P:
[DP zhe [NumP san [ClP ben [NP shu]]]]
this three Cl. book
'these three books'

b. TP, NegP, AdvP, and Mod(al)P:
[TP jihui [NegP bu [ModP hui [AdvP zai [VP lai le]]]]]
oppotunity not will again come SFP
'The oppotunity will not come again.'

c. VP and PP:
[VP zhu [PP zai [DP sushe]]]
live in dorm
'live in the dorm'

Moreover, Lin (2006) argues that, driven by feature checking, the vP complement raise to Spec-Asp(ect)P, thus deriving the surface head-final order of AspP as in (21). And the evidence comes from the contrast of CED effect (Huang 1982) shown in (22).

(21) [TP Zhangsan [AspP [vP xiu che] le tvP]]
Zhangsan repair car ASP
'Zhangsan has repaired the car.'

(22) a. Zhangsan zenmeyang xiu che?
Zhangsan how repair car
'How did Zhangsan repair the car?'

b. *Zhangsan zenmeyang xiu che le
Zhangsan how repair car ASP
'How did Zhangsan repair the car?'

4. CP-movement Hypothesis

In this section I resort to theoretical apparatus to derive surface head-final order of SFPs. First desiderata is the Chinese CP structure amended from Rizzi (1997), as given (14). To determine word order, Kayne's (1994) Linear Correspondence Axiom (LCA) is also required, given below:

(23) Linear Correspondence Axiom (Kayne, 1994)

A lexical item α precedes a lexical item β iff α asymmetrically c-commands β, or an XP dominating α asymmetrically c-commands β.

Despite its significant success, however, head-complement relation poses problems to LCA because of its mutual c-command configuration, exemplified as (24):

(24) [XP [X YP]]

(24) will lead to crash at PF for its unlinearizability. Therefore, further syntactic operation is required to fix the flaw, and movement might be an alternative to consider. Suppose (25):

(25) [XP [YP [XP X tYP]]]

Nonetheless, what is the motivation behind the strategy? And is this kind of "too-local" movement ever legitimate?

The rescue comes from Moro's (2000) idea that movement is driven by the search for antisymmetry. That is, "symmetry-breaking" serves as the driving force of "too-local" movement. The idea is formulated as below:

(26) Movement as a Symmetry-breaking Phenomenon (Moro, 2000)
Movement is driven by the search for antisymmetry.

If Moro's proposal is on the right track, the motivation and legitimacy of the movement strategy are both ensured.

Our speculation will also proceed under the framework of Chomsky's (2001) widely accepted Phase Theory, stated in (27):

(27) Phase Theory (Chomsky, 2001)
Syntactic structures are built up in phases (phases referring to vP and CP), and once a phase has been produced, the domain/complement of the phase head undergoes Transfer/Spell-out to the PF component and the semantic component.

Finally, to avoid elements left untransfered at the phase edge, I resort to Hsieh's (2005) Max-Spell-Out Hypothesis.

(28) The Max-Spell-out Hypothesis (Hsieh, 2005)
Spell-out the entire phase in the absence of uninterpretable features. In case of the presence of uninterpretable features residing at the phase edge, send only the

complement of the phase head to Spell-out.

Equipped with all the theoretical tools we need, we can now work out the surface head-final order of SFPs. Let's take (1a) for example, repeated as (29), and give its derivation process in (30):

(29) hua hong le.
flower red SFP
'The flower becomes red.'

(30) a. [$_{FinP}$ ø [$_{TP}$ hua hong]]
b. [$_{TransP}$ [$_{FinP}$ ø [$_{TP}$ hua hong]] le t$_{FinP}$]
c. Spell-out TransP → [ø hua hong le]

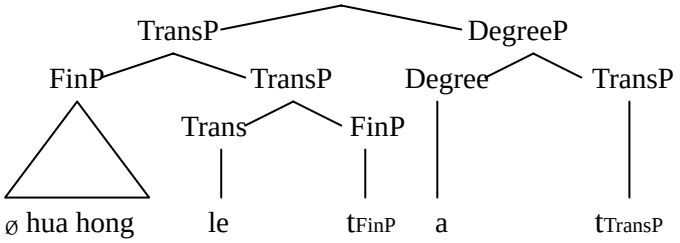
FinP moves to the specifier position of Trans head for "symmetry-breaking." Next, the entire TransP is spelled-out in the absence of uninterpretable features. Eventually, the lower copy of FinP gets deleted at PF, and we derive the surface head-final construal, as in (30c).

As for a sentence with a final particle cluster like (8), repeated as (31), the story unfolds roughly the same. The derivational process and structure are given in (32) and (33):

(31) hua hong le a./?
flower red SFP SFP
'The flower becomes red./?'

(32) a. [$_{TransP}$ le [$_{FinP}$ ø [$_{TP}$ hua hong]]]
b. [$_{TransP}$ [FinP ø [$_{TP}$ hua hong]] le t$_{FinP}$]
c. [$_{DegreeP}$ a [$_{TransP}$ [$_{FinP}$ ø [$_{TP}$ hua hong]] le t$_{FinP}$]]
d. [$_{DegreeP}$ [$_{TransP}$ [$_{FinP}$ ø [$_{TP}$ hua hong]] le t$_{FinP}$] a t$_{TransP}$]
e. Spell-out DegreeP → [ø hua hong le a]

(33) DegreeP → Spell-out → [ø hua hong le a]



Here, it is dubious why TransP does not undergo Spell-out as in the previous example. Though Hsieh (2005) suggests that ForceP, MoodP (here referred to as MoodP and as TransP), and FinP, are strong phase heads, I prefer to respect Chomsky's (2001) idea that phases are propositional in nature, and conjecture in the split CP domain only the head which can complete a proposition of the entire utterance can count as a phase head.

A "CP-sandwiched TP" is somewhat tricky. Consider (34):

(34) ruguo ni bu chifan dehua, …
if you not eat-meal if
'If you don't have meals, …'

My solution is that *ruguo* and *dehua* belong to different functional heads and a null C head stands right between them. In this way, the "sandwich relation" is obtaind as follows:

(35) a. [C3P dehua [FinP ni bu chifan]]
b. [C3P [FinP ni bu chifan] [C3P dehua tFinP]
c. [C2P ø [C3P [FinP ni bu chifan] [C3P dehua tFinP]]
d. [C1P ruguo [C2P ø [C3P [FinP ni bu chifan] [C3P dehua tFinP]]]

Notice that C1 is high enough to asymmetrically c-command C3P; therefore, no movement is required here, respecting Chomsky's (1995) Last Resort Condition.

5. Conclusion

The paper gives a thorough investigation into Mandarin SFPs. Refering to the analyses of Li and Thompson (1982), Chu (1999), and Li (2006), I induce their core functions. From Rizzi's (1997) Split CP I design a Mandarin CP system. According to the mutual scope interaction and word order of SFPs, I map them onto separate functional heads in a proper hierarchy. I also examine evidence about head directionality such as complementizer *shuo*, topicalization, and "CP-sandwiched TP," and find out that they are all refutable. I tentatively assume Mandarin CP is head-initial, which gives a uniform account for Chinese phrase structure. Finally, I exert several theoretical apparatus to derive surface head-final order of SFPs. I employ Kayne's (1994) LCA, and proceed under the framework of Chomsky's (2001) Phase Theory. Resorting to Moro's (2000) idea of "symmetry-breaking" movement and Hsieh's (2005) Max-Spell-out Hypothesis, I contend that FinP moves to a particle's specifier position for the linearization requirement. In the end of derivation the entire phrase is Spelled-out in the absence of uninterpretable features and thus obtaining surface head-final order. The proposal also explains other CP-related phenomena.

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