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Dependencies between Adverbs and Sentence-Final Particles, in and beyond Mandarin

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In this paper, the feature valuation system of Pesetsky and Torrego (2007) is utilized to explain certain concurrence restrictions between preverbal adverbs and sentence-final particles in Mandarin Chinese. The sentence-finalness of Mandarin's particles is shown to be a consequence of two factors: (i) the need for local valuation of features on the particles by appropriate, interpretable adverbs; (ii) and the general prohibition in Mandarin against head or phrasal movement. Additionally, the proposed analysis of adverb-particle dependency sheds light on heretofore mysterious properties of the second-position particles of Austronesian and Slavic languages.

1. Introduction

The lexicon of Mandarin Chinese, like that of many languages of the East Asian *sprachbund*, features a set of monosyllabic, enclitic morphemes, often referred to in the literature as *sentence-final particles.* By generous estimates, the sentence-final particles of Mandarin number about a dozen, and encode such functions as clause-typing (distinguishing interrogatives from declaratives), modality (downgrading assertions to conjectures), aspect (establishing discreteness or overlapping of events) as well as more pragmatic functions (softening statements, conveying enthusiasm). Some examples are listed below

(1) a. MA: Marks YES/NO Questions
Ni yao chi fan ma?
You want eat food MA
Do you want to eat?

b. A: Conveys emphasis/enthusiasm
Hao = OK
Hao a! = Sure!

c. BA: Indicates suggestion or conjecture
Ni shi zhonguoren ba?
You are chinese BA

You're Chinese, aren't you?

d. DE: Connected to finiteness and propositional assertion
Wo ai ni de
I love you DE
'(It is a fact that) I love you'

Two particles of particular interest are LE and NE, which are in complementary distribution as concerns their ability to co-occur with a limited set of time-related adverbs[1]. In particular, As shown in (2), the adverbs *yijing* 'already' and *jiu* 'just.then' co-occur with *le* and disallow *ne*, while the adverbs *hai* 'still' and *cai* 'only.then' co-occur with *ne* and disallow *le.*

(2) LE: Anteriority; 'closer-than-you-think' meaning
a. Xianzai *yijing* wudian *le* (**ne*)
now already 5.o'clock LE
'It's already five o'clock'
b. Wo mingtian *jiu* qu *le* (**ne*).
I tomorrow just.then go LE.
'I'm leaving tomorrow (so there's no way I can accept your invitation)'

NE: Continuity; 'farther-than-you-think' meaning
c. Ta *hai* xiao *ne* (**le*).
He still small NE
He's still young (e.g., so you can't expect him to know that word)
d. Wo mingtian *cai* qu *ne* (**le*)

[1] Apparent counterexamples to this complementary distribution exist, as in (i):

(i) Meizhun zai dongjing wo jiu dangxuan wei hualian de zhuxi le ne
Perhaps in Tokyo I just.then elected as skating.union DE chairman LE NE
'Perhaps in Tokyo I'll be elected Skating Union chairman.

Paul (2013), following Zhu Dexi (1982) , claims there are in fact three distinct NEs in Chinese:

LowC *ne (continuative aspect)*
ForceC *ne (question marking)*
AttitudeC ne (exaggeration or boasting tone)

I therefore take a sentence such as (i) to exemplify Paul's *AttitudeC ne,* a particle which itself is plausibly in complementary distribution with *bale* 'and.that's.all,' while the complementary distribution between *le* and *LowC ne* obtains.

I tomorrow only.then go NE
'I'm not leaving till tomorrow'

I hypothesize that this distribution is a result of the fact that *le* and *ne* are variant spellouts of the same functional head Deik° (short for *deixis*), located within the low end of the expanded CP domain. Following Pesetsky's and Torrego's (2007) theory of agreement, I take Deik° to be a probe, generated with an unvalued, uninterpretable deixis feature [uDeik:__]. It searches its C-command domain for a goal with interpretable features that can value it. If the goal it finds is the adverb *jiu* 'just.then' or *yijing* 'already' with the interpretable feature [iDeik:proximal], encoding anterior aspect, then Deik° is valued as [Deik:proximal]and spells out as *le*; if that goal is instead the adverb *cai* 'only.then' or *hai* 'still' with the feature [iDeik:distal], encoding continuative aspect, then Deik° is valued accordingly as [Deik:distal] and spelled out as *ne*.

As feature valuation is assumed to require C-command, independent restrictions on movement in Chinese (to be outlined in section 3) require that the entire sentence in the scope of the sentence-final particle be raised into the latter's specifier in order for the adverb and the particle to be in the right configuration. Thus the sentence-finalness of sentence-final particles – a puzzle, since antisymmetry suggests that such particles, being C-heads, ought to be sentence initial – receives a straightforward explanation.

This paper is organized as follows. In section 2, I present the semantics of the aspect-related adverbs and sentence-final particles of Chinese, and motivate the choice of corralling them under the term *deixis*. Section 3 details the proposed mechanism of valuation and shows its usefulness in explaining quirks of Chinese phrase structure and particle order. Section 4 explores the consequences of the analysis, in particular the explanatory power of the ostensibly inelegant notion it introduces of null adverbs and how that can help make sense of the distribution of second position particles in such languages as Tagalog and Czech. Section 5 is the conclusion.

2. LE, NE, and deixis: aligning events with reference points, expectation with reality

It was Sybesma (1997, 2007) who first designated Mandarin sentence-final particle *le* as the head of *DeikP*, since the particle does for Chinese something similar to what tense does for Western languages: fixing events in a timeline. (Chinese lacks proper tense, insofar as Speech Time has no morphological reflex (unless Speech Time happens to be equivalent to Reference Time, by default or by designation, i.e., by use of the adverb *xianzai* 'now'). Meanwhile, it is widely understood that *le* also fulfills a "higher" function: in the terms of Li and Thompson (1981), *le* highlights an accompanying proposition as a "currently relevant state"; in the terms of Van den Berg and Wu (2006), *le* marks points of "common ground coordination", i.e., deviations, or solutions to deviations, from the cultural or epistemic common ground underlying any interpersonal interaction. *Deik* (for *deixis*) is therefore a particularly fitting name, since the particle serves to "point out" deviations from expectation both in time and in the discourse. A

very simple example of this non-temporal use of *le* can be observed in the minimal pair in (3):

(3) a. Zaijian = Goodbye!
b. Zaijian le = Alright, goodbye! (i.e., I'm now ending our conversation)

Ne, for its part, also seems to straddle the boundary between time and discourse. As mentioned above, it expresses continuative aspect, pairing often with adverbs like *hai* 'still', *cai* 'only.then' as well as with the progressive auxiliary *zai* and the durative suffix *–zhe.* Wu (2005) identifies a higher function of *ne* that seems to be quite similar to what others have said of *le*. His catchphrase for *ne* is "hearer engagement," claiming that "by using *ne*, the speaker draws the hearer's attention to the information marked by the particle and urges the hearer to adjust shared common ground (CG) accordingly with regard to the current interaction" (Wu 2005: 47). In light of these conclusions from the functionalist literature, an attempt to classify both *le* and *ne* as instances of the same C-head does not seem far-fetched.[2]

The deep-seated connection between time and expectation in Chinese adverbs, with correspondences in sentence-final particles, is illustrated in Tsai 2013. He first cites Lai (1999), who showed that the adverbs *jiu* and *cai* have four uses: temporal, restrictive, conditional, and emphatic. The relevant examples are repeated below:

(4) Temporal use of *jiu* and *cai*
a. Zhangsan wu dian cai lai.
Zhangsan five o'clock only.then come.
'Zhangsan did not appear until five o'clock.'
b. Zhangsan wu dian jiu lai le.
Zhangsan five o'clock just.then come LE.
'Zhangsan already appeared at (or before) five o'clock.'

(5) Restrictive use of *jiu* and *cai*
a. Ta chi le san ge pingguo cai bao ne
he eat PFTV three CL apple only.then full NE.
'He became full only after eating three apples.'
b. Ta chi san ge pingguo jiu bao le.

[2] It has been brought to my attention that *le*'s appearance in the presence of the adverb *jiu* seems more obligatory, whereas *ne*'s appearance in the presence of the adverb *cai* seems more optional and more a show of emotion, bringing into question whether the two can really be instances of the same functional head, differently valued. This judgment may be the result of the fact that, I cases such as (5b), sentence-final *le* can potentially be the concatenation of Deik° *le* and verb-suffix, *–le,* a marker of internal, perfective aspect, whose presence is a requirement of certain telic verbs and complements. My gratitude to Marie-Claude Paris for pointing out this issue.

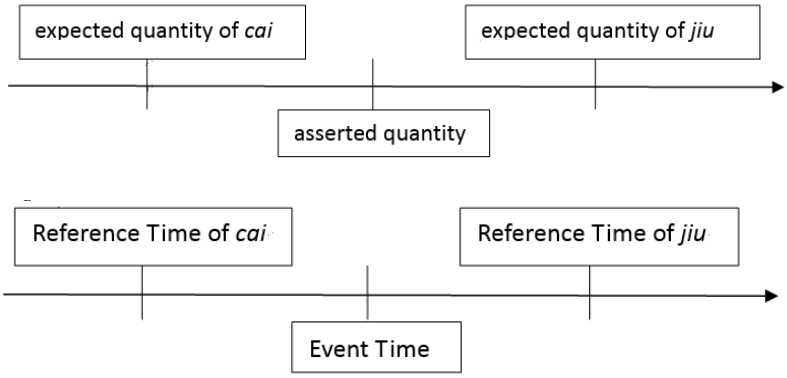
he eat three CL apple just.then full LE
'He became full after only eating three apples.'

(6) Conditional use of *jiu* and *cai*
a. Zhangsan qu Lisi cai qu.
Zhangsan go Lisi only.then go
'Lisi will go only if Zhangsan goes.'
b. Zhangsan qu Lisi jiu qu.
Zhangsan go Lisi then go
'Lisi will go (merely) if Zhangsan goes.'

(7) Emphatic use of *jiu* and *cai*
a. Lisi cai shi wo yao zhao de ren.
Lisi just be I want look-for COMP person
'It is LISI who I am looking for.'
b. Lisi jiu shi wo yao zhao de ren.
Lisi exactly be I want look-for COMP person
'Lisi is exactly the person that I am looking for.'

In short, the pattern is as follows: If the expected time, quantity, condition, etc., is in excess of the asserted one, it licenses *jiu* (an adverbial counterpart of *le*). If, on the other hand, what is asserted exceeds what is expected, this licenses *cai* (an adverbial counterpart of *ne*). Tsai represents this visually with the diagrams in (8).

(8) Parallel between temporal and non-temporal uses of *jiu* and *cai* (Tsai, 2013: 17-18)



For the purposes of this analysis, I draw on Tsai's (2013) findings and collapse aspectual anteriority and closer-than-you-think semantics under the feature [proximal], associated with *le*, and continuative aspect and farther-than-you-think semantics under the feature [distal], associated with *ne*.

3. The Analysis and its consequences for Chinese

At the heart of the theory presented here is the claim that presence or absence of certain Chinese sentence-final particles, and indeed the phonetic form of those particles, is the result of agreement between C-heads in the left periphery and pre-verbal adverbs, in the same way that the morphology of determiners and adjectives in Romance is the result of agreement of phi-features between said elements and the nominals they modify. For clarity, we will walk through the derivation of (2a), repeated below as (9).

(9) Xianzai *yijing* wudian *le* (**ne*)
now already 5.o'clock LE
'It's already five o'clock'

Following Kayne 1994, wherein all syntactic structures are taken to be base generated as right-branching, regardless of what word order eventually surfaces, I assume that the underlying structure of (9) is as in (10):

(10) [$_{\text{DeikP}}$ *le [uDeik:__]* [$_{\text{TP}}$ *xianzai yijing[iDeik:proximal] wu dian*]].

Deik°, born high in the left periphery like all complementizers under antisymetry, requires valuation of its deixis feature. The adverb *yijing [iDeik:proximal]* 'already' is capable of valuing it, but must C-command it in order to do so. If we assume that languages avoid unnecessary movement as a matter of course, moving the adverb by itself to [Spec, Deik] would be an efficient means of satisfying this featural requirement, in the same way that wh-arguments and -adjuncts move to [Spec,C] in English wh-questions. Chinese, however, is averse to phrasal movement in general, as evidenced by the fact that Chinese is a wh-in-situ language. As a rule, wh-arguments and –adjuncts remain in their base generated positions:

(11) Zhangsan xuyao shenme?
Zhangsan need what
'What does Zhangsan need?'

With overt movement ruled out, one wonders if *covert* movement of the adverb could heave instead satisfy Deik's featural requirements and thereby left the underlying word order of the sentence in (9) undisturbed. But consider the sentence in (12). It is is well-formed, despite the fact that the wh-word *shenme* located within a complex NP island.

(12) Akiu kanbuqi [zuo shenme de ren]? [Tsai 1999:42]
Akiu despises does what REL person
'*What does Akiu despise a person who does (for a living)?'

This suggests that Chinese wh-words achieve their sentential scope via operator binding, rather than covert movement to C. With both overt and covert movement of the adverb ruled out, then, the only available choice is pied-piping of the entire TP that contains it, as illustrated in (13), the post-movement version of (10).

(13) [$_{DeikP}$ [$_{TP}$ *xianzai yijing[iDeik:proximal] wu dian*] [*le [Deik:proximal]* [$_{TP}$ …]]].

This is analogous to how English will pied-pipe an entire DP in order to bring a [wh] feature up to C, as it does in (14):

(14) [[Whose father's] book] did you buy?

One prediction made by this theory is that there should be other instances of adverb-C dependency in Chinese apart from DeikP. Pairs such as *hui* 'undoubtedly/will' + *de* (Fin°) and *yinggai* 'probably/should' + *ba* (Epist°) bear this out.

(15)[3] Wo *hui* wangcheng zuoye *de*.
I will finish assignmnent DE
"I will undoubtedly finish the assignment'

(16) Ta *yinggai* bu zai jia *ba*.
He probably NEG be.at home BA.
'He's probably not at home, I would guess.'

To be sure, it is far from obligatory that both elements of an adverb-particle pairs like *yijing+le, hai+ne, hui+de, yinggai+ba* appear together in every instance. Absence of a sentence-final particle is simple a sign that the C-head in question is absent from the numeration. As the adverbs enter the derivation valued and interpretable, an occasionally impoverished left periphery is not a problem for them. Absence of the corresponding adverb when a sentence final-particle is present, on the other hand, would lead to a crash in the derivation when [u*Deik*:__] - or [u*Fin:*__] or [*uEpist:*__] for that matter - reached LF unvalued. Yet such sentences are attested:

(17) Xianzai wu dian le
Now 5 o'clock LE

Therefore, to maintain the theory as it stands, we must conclude that every apparently adverb-less sentence that has a sentence final-particle, actually has a *null* adverb,

[3] For the sake of the discussion, I am calling *hui* 'undoubtedly/will' and *yinggai* 'probably/should' adverbs, though *modal* is perhaps a more appropriate term. But it is the dependency itself that is crucial.

fulfilling the same function as it would if pronounced. While ostensibly inelegant, we will see in the next section how this assumption sheds light on the behavior of particles beyond Mandarin[4].

3. Consequences of the analysis for Tagalog, Czech

The analysis presented here claims in part that the particles of Chinese are in sentence-final position as a consequence of the fact that Chinese is rather impermissive of phrasal movement. This predicts that, in languages without restrictions on phrasal movement, sentential particles should surface in a more transparently left-peripheral position. The Austronesian language Tagalog bears this prediction out. As a language, Tagalog exhibits both head movmeent (V-to-C raising, as in (18)) and phrasal movement (wh-movement, as in (19))[5]:

(18) B-in-ili ni Maria ang libro **sa tienda** (Aldridge 2004: 119)
Perf-buy Erg Maria Abs book at store
'Maria bought the book at the store.'

(19) **Saan** b-in-ili ni Maria ang libro? (Aldridge 2004: 120)
where Perf-buy Erg Maria Abs book
'Where did Maria buy the book?'

Interestingly, the same complementary distribution between *le* and *ne* in Mandarin has a direct analog in Tagalog. As exemplified in (20), Tagalog Deik° is spelled out as *na* when valued as [proximal] and as *pa* when valued as [distal], and consistently occurs in second-position (with the element in first position being either a head-raised verb or topicalized phrase).

(20) a. Umalis na si-John.
PERF-leave NA PTT-John.
'John has (already) left.'

b. Maliit pa siya
small PA he
'He is (still) young'

c. Sa Biernes na ang piesta.
on Sunday NA the party

[4] The notion of null adverbs is not unprecedented. Keller's (1994) argues for a theory of tense that involves so called PRO-ADVs generated in the specifiers of functional heads.
[5] For an argument in favor of head V-to-C head movement in Tagalog, and its role in determining the ordering of second-position clitics, see Tanenbaum 2016.

'The party is next Friday (and there is little time between now and then)

d. Sa Biernes pa ang piesta.
on Sunday PA the party
'The party is next Friday (and there is lots of time between now and then)

Also interesting is the fact that, Tagalog has no overt adverbs corresponding to its particles (no *jiu, cai*, *yijing, hai*). Hence, I posit that here the raising of null adverbs (proADVs) is the only available strategy for particle valuation.

Further support for this kind of adverb-C agreement as a general syntactic mechanism is found in Czech. Czech exhibits of cluster of second position particles (or "clitics"). The cluster is for the most part strictly ordered (e.g, interrogatives precede conditionals, which in turn precede pronominals, etc.). The exception to this order is the so-called "fringe" particles, which may appear either at the beginning or at the end of the cluster. The "fringe particle" *už* 'already' exemplifies this in (21) (from Franks and King, 2000).

(21) A ten mi oznámil, že (***už)*** *jsem si tě* (***už***) najal.
And he me informed, that (deik:prox) have refl you (already) hired
'And he informed me, that I already hired you.'

Supposing that *už* marks proximal deixis, the mystery of its mutable position now has a ready solution: *už* optionally spell out either an adverb low in the clause, or the Deik-head high in the clause into whose specifier that adverb's null variant has raised for feature valuation.

4. Conclusion

In this paper, I have appealed to the notion of feature valuation à la Pesetsky and Torrego (2007) to shed light on the complementary distribution of the deictic particles *le* and *ne* in Mandarin Chinese, presenting them as spellouts of different feature valuations ([proximal] vs. [distal]) of the same functional head. I argue that valuation of sentence-final particles via features on adverbs extends to particles encoding finiteness and epistemics as well, which explains the prevalence in Mandarin of adverb-particle pairs, as well giving a reason for why Mandarin's sentence-final particles are sentence-final in the first place. Finally, this way of looking at particles points the way toward a more principled account of the absence of overt deictic, epistemic and other C-related adverbs in Tagalog, and on the *prima facie* unstable position of the so-called "fringe" clitics of Czech.

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