Obligatory XP-raising in Chinese*

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Due to its occurrence in sentence final position, the sentence particle (SP) is sometimes taken to be generated in a head-final functional projection in the left periphery. However, the Dislocation Focus Construction (DFC) [also known as “right dislocation” ] in Cantonese and Mandarin has provided new evidence that the functional projection is head-initial. The findings entail the reconsideration of the syntax of the SP and the clausal structure in Chinese in general. It is argued that all Chinese sentences, including normal word order sentence, are subject to XP-raising around the SP.

1. Head-Initial or Head-Final CP?

The sentence particle (SP) is a common element occurring at the end of a Chinese sentence, as in (1) and (2).

(1) Keoi wui heoi Doleondo aa. (Cantonese)
   he   will go Toronto  SP
   'He will go to Toronto.'

(2) Ni xihuan shenme yinyue ne? (Mandarin)
   you like      what     music   SP
   'What kind of music do you like?'

Because of its relation to illocutionary force, the SP in Chinese is often regarded as the head of functional projections in the CP domain (Cheng 1991, 1994, Tang 1998, Law 2003, Li 2006). Cheng (1991, 1994) analyze that question SPs are an unselective binder hosted by CP. Semantically, the SP has scope over the entire sentence and encodes the speaker's attitude/illocutionary force. Nevertheless, the literature is ambivalent about whether the projections that hosts SPs are head-initial or head-final. The two logical possibilities are illustrated in (3).

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The merit of the head-final hypothesis lies in its simplicity. As the SP (almost) always appears at the end of a sentence, (3a) gives us a natural explanation of the word order without further stipulation. In most cases, the representation seems to work fine. In contrast, the head-initial hypothesis requires that the SP is generated to the left of the clause. In order to get the right surface word order, it must be accompanied by an IP movement around the SP, as indicated in (3b).

The significance of the analysis is its implication to the directionality of heads and the basic word order in Chinese. The basic word order of Chinese has been the subject of debate in the literature. According to Greenberg's typological generalization, VO languages usually have post-nominal modification and preposition. However, Chinese displays a mixture of features of VO and OV language. On the one hand, it patterns with VO languages in that the head precedes its complement across quite a number of phrasal projections such as verb phrase, classifier phrase, prepositional phrase, etc. On the other hand, the relative clause occurs before the head noun, and adjectival modifier precedes the head noun. A better understanding of syntactic structure of the SP will not only illuminate our understanding of the left periphery of Chinese but also have a bearing on the debate. If (3b) is the correct representation, it will provide an argument suggesting that Chinese is head-initial and the basic word order is SVO. Based on some novel data using the Dislocation Focus Construction (DFC) in Cantonese, it will be argued that the head-initial analysis is the correct one.

The rest of the paper will be organized as follows. Section 2 reviews some previous head-initial analyses of CP in Chinese. In Section 3, the empirical data using the DFC will be presented to show that the clause could indeed be generated to the left of the SP. The findings entail clausal movement, the proposal of which is described in Section 4. Section 5 provides a conclusion for the paper.

2. Previous Head-Initial Analyses

The head-initial account of the SP is theoretically appealing because Chinese seems to be more like SVO language. However, the empirical evidence for head-initial C in Chinese is difficult to obtain because the SP (almost) always sits at the sentence final position. In this section, some arguments for the head-initial analyses in previous works will be reviewed.

Sybesma (1999) argues for head-initial analysis and IP movement into Spec, CP. First, he notes that the head-final analysis is consistent with Kayne’s anti-symmetry. Second, the IP movement is necessary. He assumes that the interrogative C has some feature to be checked off, which is done by moving the entire wh-expression structure containing the wh-variable and its associated Q-operator. Following Tsai (1994),
Sybesma assumes that the Q-operator in English is adjoined to the lexical projection containing the \( wh \)-variable while the Q-operator in Chinese, to immediate IP containing the \( wh \)-variable. As a result, only the \( wh \)-phrase needs to be moved in English but the entire IP needs to move in Chinese.

Although the analysis explains the apparent differences of \( wh \)-construction in English and Chinese, there are two major disadvantages with the account. First it offers little motivation for movement in sentences that are non-interrogative. Second, while the analysis is not implausible, the theoretical assumptions have little independent empirical support.

Several recent studies on SP syntax are related to some special properties of Taiwanese SP \textit{kong}. Simpson & Wu (2002) notes that the SP \textit{kong} is undergoing grammaticalization from a verb to a complementizer. The incomplete grammaticalization of SP makes it possible for us to observe the occurrence of the SP in pre- and post-clausal position, as in (5) and (6) respectively.

(5) A-hui siong kong A-sin m lai. \( \text{=(36) in Simpson & Wu 2002} \)  
A-hui think KONG A-sin NEG come  
‘A-hui thought that A-sin was not coming.’

(6) A-hui siong A-sin m lai kong. \( \text{=(38) in Simpson & Wu 2002} \)  
A-hui think A-sin NEG come KONG  
‘A-hui thinks A-sin is not coming.’

Furthermore, by positing head-final analysis, they argue that some apparent violations of the tonal \textit{sandhi} patterns of \textit{kong} and the IP can be explained.

Hsieh (2005) and Hsieh & Sybesma (forthcoming) provided some new data of \textit{kong}. They focus on the distribution of the complementizer \textit{kong} and the homophonous SP \textit{kong}. What is important to them is that the TP/IP-clause can be “sandwiched” between the complementizer \textit{kong} and the SP, as in (7).
"CP-sandwiched TP" configuration: \textit{kong} \text{[TP ... ]} SP

(7) \([\text{CP} \ \text{kong} \ [\text{TP} \ \text{abing pat li} \ \text{la}]] \quad (=4b) \text{ in Hsieh 2005)}

\begin{itemize}
  \item COMP \quad \text{p.n.} \quad \text{know character CL}
  \item ‘(I am surprised that) Abing knows (how to read) Chinese character!’
\end{itemize}

They consider in great detail three logical possibilities in the derivation of CP-sandwiched TP word order. The mixed head directionality is rejected because of the complexity of parameter setting and the burden of language acquisition. Neither does the head-final structure look feasible because it entails violation of various movement constraints, e.g. head-movement constraint, lack of rightward movement in Chinese and anti-locality. As a result, they pursue the head-initial hypothesis.

Hsieh and Sybesma argue that it is the lower CP, not the IP/TP, that gets moved. (8) is the basic structure.

(8) Head-initial: \([C_1 \ [C_2 \ [\text{TP}]]] \rightarrow [[[C_2 \ \text{TP}]; C_1] \ \text{ti}] \quad (\text{Hsieh 2005})

\[ \begin{array}{c}
\text{C}_1 \text{P} \\
\text{C}_1' \\
\text{C}_1^0 \\
\text{la} \\
\text{C}_2^0 \\
\text{C}_2 \text{P} \\
\text{IP} \\
\text{kong} \\
\end{array} \]

\text{C}_2^0 \text{ is taken to be the phase head. In order to linearize (8) in the sense of Kayne (1994), C}_2 \text{P has to enter into asymmetric c-command relation with C}_1^0. \text{Following Moro (2000), C}_2 \text{P moves to the right of C}_1^0 \text{ as a last resort strategy to break the symmetry. Consequently, the sequence } \text{C}_2^0 \text{IP C}_1^0 \text{can be derived.}

Unfortunately, the studies cited in this section have two limitations. First, they only deal with some very restricted set of particles like Q-particle \textit{ma}, the SP \textit{kong} and the complementizer \textit{kong}. Second, given the data available so far, the IP always occurs to the right of the SP.\footnote{Hsieh and Sybesma argue that the sandwiched \textit{kong} is different from the sentence-final \textit{kong}. The suggest that the former is the head of FinP.} \text{We have not seen good empirical evidence showing that the clause originates from a position to the right of the SP. Even though these studies have offered some new insights, it seems fair to say that the empirical grounds for head-initial analysis is not so strong. In Section 3, some new data based on the DFC will be presented to substantiate the empirical basis of the head-initial analysis. New sights into Chinese clausal structure will be gained from it.}
3. New Evidence for Head-initial Analysis

3.1. Dislocation Focus Construction (DFC)

The DFC, also known as "right dislocation" and "afterthought construction", has been noted for quite some time in the Chinese descriptive and functional grammar literature (Chao 1968, Lu 1980, Guo 1999, Liang 2002 among others). Recently, the construction also received some attention in the generative literature (Packard & Shi 1986, Siu 1986, Cheung 1997, 2005, Law 2003). Despite the relative rigid word order in Chinese, the construction gives rise to inverted word order. The DFC occurs predominantly in spontaneous conversation. In this paper, the discussion will focus on Cantonese data. However, many of the observations are carried over to Mandarin.

A defining feature of the DFC is that part of the sentence sits to the right of the SP (Cheung 2005). Compare the normal word order sentence (9) and the DFC counterparts in (10).

(9) Keoi wui zinghai maai jat bou saugei aa3. (Regular SVO order)
   he will only buy one CL cellphone SP
   ‘He will only buy a cellphone.’

(10) a Wui zinghai maai jat bou saugei aa3, keoi. (DFC)
   will only buy one CL cellphone SP he
   ‘He will only buy a cellphone.’

   b Zinghai maai jat bou saugei aa3, keoi wui. (DFC)
   only buy one CL cellphone SP he will

   c Maai jat bou saugei aa3, keoi wui zinghai. (DFC)
   buy one CL cellphone SP he will only

   d Jat bou saugei aa3, keoi wui zinghai maai. (DFC)
   one CL cellphone SP he will only buy

In (10), the part that comes after the SP is shaded.\(^2\) To the best of my knowledge, the DFC is the only construction in Chinese in which the SP does not occur in the sentence-final position. The DFC therefore is a useful tool to probe into Chinese clausal structure, which would otherwise be difficult. According to Cheung (2005), the DFC has the following properties.

(11) Properties of the DFC
   a. Part of the sentence appears after the SP.
   b. There is no restriction on the range of SPs in the DFC.
   c. There can be only one SP in the DFC sentence. It is impossible to have another

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\(^2\) The comma in the DFC sentences is inserted for ease of identification of the inverted part. It does not indicate a pause. In fact, it sounds unnatural to have a pause after the SP.
SP at the very end of the entire DFC sentence.
d. Different phrasal categories (e.g. DP, VP, IP, etc.) can go before the SP.

These properties will become relevant in the discussion in Section 4. For the sake of space, readers are referred to Cheung (2005) for detailed discussion of these properties.

3.2. Possible Syntactic Representations

This section investigates the possible syntactic representations for the DFC. In particular, the fragment analysis and the rightward movement analysis will be argued against.

Proposal 1: Leftward Movement
As has been mentioned above, the DFC requires part of the sentence to occur after the SP, as in (10). The word order, \( \beta \text{ SP } \alpha \), can potentially offer strong empirical support for the head-initial hypothesis of the projection that hosts the SP. To derive the word order, some leftward movement operation is needed to move the \( \beta \)-part around the SP, as in (12).

\[
(11) \text{Head-initial SP + leftward movement}
\]

\[
\begin{align*}
\text{CP} & \\
\beta & \text{C'} \\
\text{SP} & \alpha \beta 
\end{align*}
\]

While (12) is the structure to be argued for, some alternative representations can potentially derive the sequence, \( \beta \text{ SP } \alpha \). Here two possibilities will be considered, namely, rightward movement analysis, parallel structure analysis and fragment analysis. It will be shown why they are not plausible.

Proposal 2: Rightward Movement
The post-SP material could potentially be derived by adjoining certain part(s) of the sentence to CP, as in (13). In this case, the CP projection is head-final.

\[
(13) \text{Head-final SP + rightward movement}
\]

\[
\begin{align*}
\text{CP} & \\
\text{CP} & \alpha \\
\text{C'} & \\
\text{IP} & \text{SP} \\
\alpha & \beta 
\end{align*}
\]
The analysis has two difficulties. First, rightward movement is generally not attested in Chinese. Second, even if rightward movement exists, $\alpha$ is generally a remnant, instead of a constituent. For example, $\alpha$ in (10c), repeated as (14), is keoi wui zinghai.

(14) Keoi wui zinghai maai jat bou saugei aa3, Keoi wui zinghai
    he will only buy one CL cellphone SP

To derive $\alpha$, multiple applications of the rightward movement rule are needed. However, these multiple movements are difficult to motivate. Further, the movement must apply to both phrases (e.g. subject DP) and heads (e.g. wui 'will' and zinghai 'only'). Moreover, some rule must be stipulated to guarantee that the words in the post-SP $\alpha$ line up in the correct order. Alternatively, $\beta$ may be first preposed out of the IP. This is followed by rightward movement of the remnant IP. However, this strategy requires the motivation of both leftward movement and remnant movement. Because of the unattested rightward movement in Chinese, I therefore will not pursue it further.

Proposal 3: Parenthetical Fragment Structure
This analysis hinges on the fact that two independent sentences exist in the DFC. This time, however, the part that comes after the SP is a parenthetical fragment, juxtaposing with a sentence. The configuration is illustrated in (21).

The two parts are assumed not to be connected syntactically but are pragmatically related to each other. (15) produces the sequence $\beta$ SP $\alpha$. The head-final CP hypothesis can be maintained. The fragment assumption is not unreasonable. Parenthetical fragments are frequent in spoken language. In the functional grammar literature, the post-SP part in the DFC is often referred to as an afterthought or parenthetical. Consider (16) and (17). 'He said' and 'last week' could be interpreted as some sort of qualification of the preceding sentence.

(16) Zoengsaam beng-zo aa3, keoi waa.
    Zoengsaam sick- PERF SP he say
    'He said that Zoengsaam was sick.'
Nevertheless, the proposal is untenable for two reasons. First, it is unclear why it is not possible to have another SP on the right of the so-called "fragment." (see property c in (11c)) The more compelling reason to refute (15) is the observation that in the DFC, $\alpha$ and $\beta$ exhibit robust syntactic connectivity, which generally cannot be obtained across sentences.

Two syntactic tests of the syntactic connectivity between the pre- and post-SP will be presented, namely, (i) zinghai 'only' test, and (ii) doudai test. Both tests involve some dependency relation between an element in $\alpha$ and another one in $\beta$. They can be connected via c-command relation. If the fragment analysis, as illustrated in (18), is correct, the dependency between $\alpha$ and $\beta$ should be illicit because they are not related via c-command relation.

If, however, such dependency relation is possible, (19) has to be refuted. It turns out that such dependencies are indeed very assessable. Furthermore, despite the $[\beta \ SP \alpha]$ DFC sequence, one interprets it as if it was $[\alpha \ SP \beta]$, which I will informally refer to as "reconstruction effects."

Zinghai 'only' Test
Like English only, the interpretation of zinghai 'only' in Cantonese is established by its association with an element in the same sentence. Jackendoff (1972) proposes a rule "association with focus" for English only. It says that the focus of only can only be associated with an element in its c-command scope. Cantonese zinghai has the same distribution pattern. Take (19) as an example. The interpretation of preverbal zinghai follows the association with focus rule. Words in capital letters refer to the associated focus. It correctly rules out (a) because the subject DP is not in the scope of preverbal zinghai.

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restriction is illustrated in (20) and (21). The focus of *zinghai* cannot be associated with the DP 'the novel' and the VP 'borrowed the novel' in the respective preceding sentence. A second SP is inserted at the end of the second sentence to force multiple sentence reading.

(20) [GO BUN SIUSYUT hou hou-tai aa3.] *[Zoengsaam zinghai ze-zo __ aa3.] DEM CL novel very interesting SP Zoengsaam zinghai borrow-PERF SP 'The novel is very interesting. (So) Zoengsaam only borrowed (THE NOVEL). [He did not borrow other novels]'

(21) [Leisei ZE-ZO GO BUN SIUSYUT aa3.] *[Zoengsaam dou zinghai wui __ aa3]. Leisei borrow-PERF DEM CL novel SP Zoengsaam also only will SP 'The novel is very interesting. So Zoengsaam only borrowed (THE NOVEL). [He did not borrow other novels]'

On might argue that the ungrammaticality could possibly be due to the unavailability of anaphoric relation between the null pronoun in the second sentence and the corresponding DP or VP in the first sentence. However, this cannot be true. In fact, if *zinghai* is removed, the anaphoric interpretation is perfectly fine, as shown in the non-DFC sentences (22) and (23).

(22) [Go bun siusyut hou hou-tai aa3.] [Zoengsaam ze-zo __ aa3.] DEM CL novel very interesting SP Zoengsaam borrow-PERF SP 'Zoengsaam only borrowed (the novel).'  

(23) [Leisei ze-zo go bun siusyut aa3.] [Zoengsaam dou wui __ aa3]. Leisei borrow-PERF DEM CL novel SP Zoengsaam also will SP 'The novel is very interesting. So Zoengsaam only borrowed (THE NOVEL). [He did not borrow other novels]'

The null object in (22) can be coreferential with 'the novel' whereas the deleted VP is interpreted as the VP in the previous sentence. To sum up, *zinghai* 'only' cannot be associated with an element across a sentence.

Let us return to the fragment analysis of the DFC. Interestingly, it is possible for *zinghai* in the $\alpha$-part to associate with an element in the $\beta$-part, as in (24) and (25).

(24) [DP GO BUN SIUSYUT ] aa3, Zoengsaam zinghai ze-zo. (DFC) DEM CL novel SP Zoengsaam only borrow-PERF 'Zoengsaam only borrowed THE NOVEL.'

(25) [VP ZE-ZO GO BUN SIUSYUT] aa3, Zoengsaam zinghai. (DFC) borrow-PERF DEM CL novel SP Zoengsaam only 'Zoengsaam only BORROWED THE NOVEL.'

The above two sentences may sound a bit odd when uttered out of context. They

\[4\] Note that the above sentences are ungrammatical on the intended reading only. For example, (21) is acceptable when *zinghai* focused the verb *ze-zo* 'borrowed.' However, we are not interested in this reading.
can be improved when they served as an answer to the two respective questions.

(26) Zoengsaam zinghai ze-zo matje aa3? (Question for (24))
Zoengsaam only borrow-PERF what SP
'What is the thing x such that Zoengsaam only borrowed x?'

(27) Zoengsaam zinghai zou-zo matje aa3? (Question for (25))
Zoengsaam only do- PERF what SP
'What has Zoengsaam done exclusively (as opposed to some other things)стрелка?

To the extent the above two sentences are possible, it entails that α and β must be components of a single sentence. As a result, the fragment analysis cannot the correct structure. Though we still do not understand at this point why zinghai can focus an element not in its surface scope, an analysis that assumes that the α and β constitute a sentence is necessary.

Doudai Test (equivalent to Mandarin daodi) [wh-the-hell]
In Cantonese, one way to form wh-the-hell expression is to use the adverb doudai. The equivalent of doudai in Mandarin is daodi. According to Huang and Ochi (2004), daodi has to be associated with a wh-phrase in its c-command domain.

(28) Ni daodi xiwang ta hui mai shenme? (=Mandarin; Huang & Ochi 2004)
you DAODI hope he will buy what
'What the hell do you hope that he will buy?'

(29) *Shei daodi xiang yao zhe-fu hua? (=Mandarin; Huang & Ochi 2004)
who DAODI think want DEM-CL picture
'Who the hell wanted this picture?'

(28) is a grammatical sentence because daodi c-commands shenme 'what.' In contrast, the failure of shei 'who' being c-commanded results in the ungrammaticality of (29). Further, daodi is ill-formed if the target wh-phrase is in another sentence.

(30) Ta mai-le shenme ne? *Daodi gangcai qu-le chaojishichang.
he buy-PERF what SP DAODI just.now go-PERF supermarket
(Mandarin)

To sum up, daodi and the wh-associate can only be well-formed when the former c-commands the latter. Cantonese doudai works in the same way as Mandarin daodi.

Now what about the DFC sentence? Consider (31) and (32).

(31) [Maai-zo matje ] aa, doudai nei __? (DFC)
buy-PERF what SP DOUDAIAI you
'What the hell did you buy?'
(32) [Nei maai-zo matje ] aa3, doudai __? (DFC)  
you buy-PERF what SP DOUDAI  
'What the hell did you buy?'

The well-formed DFC sentences entail that the entire DFC sentence involves only one sentence. It can be further confirmed by ungrammaticality of (33) and (34). The addition of another SP at the end forces the multiple sentence reading, making the use of doudai illicit.

(33) [Maai-zo matje ] aa3? *Doudai nei __ aa3? (Two sentences)  
buy-PERF what SP DOUDAI you SP

(34) [Nei maai-zo matje ] aa3? *Doudai __ aa3? (Two sentences)  
you buy-PERF what SP DOUDAI SP

Again, the unavailability of surface c-command relation in (31) and (32) can be attributed to reconstruction effects.

3.3. Remarks

On the basis of the syntactic tests, the post-SP part has been argued to be an integral part of the pre-SP part. The DFC should not be analyzed as two independent fragments or sentences. Reconstruction effects are consistently observed in the tests.

4. Clausal Structure of Cantonese

The establishment of the head-initial analysis of SPs only solves part of the problem. The next question to ask is how the clausal structure of Cantonese should look like. Some mechanism is needed to guarantee that the SP shows up sentence-medially in the DFC and sentence-finally in normal word order sentences. The following is proposed to account for the apparently different word orders.

(i) The SP is the head of a head-initial functional projection, FP\(^5\), in the CP domain.
(ii) The SP has a +EPP feature that obligatorily requires the movement of an XP to the Spec, FP to check off the feature.

In the DFC, an XP, e.g. any of the circled constituents in (35), is moved to Spec, FP to fulfill the EPP requirement. In the normal word order sentence, it is the IP that gets moved to the front. The proposal thus treats the two word orders in the same fashion. They only differ in the constituent targeted.

\(^5\) The FP could be ForceP as the SP often conveys discourse meaning and speaker attitude.
The analysis correctly predicts a number of the properties of the DFC noted earlier in (11). First, it explains naturally why syntactic connectivity as demonstrated in Section 3.1 is possible. In the DFC, we are dealing with leftward movement. Reconstruction effects are conceivably the results of A'-movement. In fact, assumption (i) seems to be the only option available. Given that rightward movement is unattested in Chinese, the head-final account would have a hard time explaining how a sentence-medial SP is possible at all. The two characteristics below follow from assumption (ii). Although the SP is located in a head-initial projection, the SP never occurs sentence-initially. The EPP feature requires that Spec, FP must be filled. Although the formulation of EPP feature in Chinese is unconventional, very similar mechanism is widely attested in Germanic languages. The obligatory movement of an XP to Spec, CP is reminiscent of the verb second (V2) phenomenon in German and Dutch. Moreover, the fact that Spec, FP can be filled by constituent of different types can be easily accounted for. In V2 languages, the verb is moved to C, and the Spec, CP can be filled by any XP, e.g. a DP, PP, VP, Adv, etc. Finally, the analysis entails that there is only position for the SP. A second SP at the very end of the DFC sentence is never possible. As the SP can generally occur at the end of sentence and also at the end of fragments, the movement analysis offers a straightforward account of why such possibility is unavailable at the end of the DFC.

The analysis sketched differs from previous studies cited in Section 2 in an important way. Recall that the data in Simpson and Wu (2002), Hsieh (2005) and Hsieh & Sybesma (forthcoming) are based on the special property of kong. There is often the concern of generalizability of the observations. In the DFC, it is possible to actually see the SP to precede part of the sentence. Moreover, the empirical data from the DFC holds for all SPs in Cantonese.

Some puzzles, however, remain. First, apart from EPP, some other factors are likely to constrain the movement of Spec, FP. Obviously, the majority of Chinese sentences are not realized in the DFC. It is not clear why the IP is much more preferable than other constituents. Second, as noted in Cheung (1997, 2005), the part before the SP in the DFC (but not the rest of the DFC) receives focus. Focus seems to go with the
fronted XP, but not necessarily with front IP in regular word order. Third, what can be moved are only those constituents on the “spine” (Cheung 1997, 2005). It, for example, excludes the leftward movement of the subject DP. Some mechanism is needed to block it. In contrast, the movement of the subject DP to Spec, CP is certainly possible in V2 languages.

5. Conclusion

The occurrence of the SP in the middle of the DFC in Chinese makes it a good piece of empirical evidence is a head that is generated on the left (head-initial). The syntactic connectivity between the pre- and post-SP part in the DFC requires that the two components should be related syntactically. The findings require that XP-raising around the SP is necessary in all Chinese sentences. It provides a natural and unified account of not only the various word order possibilities but also a number of properties of the DFC.

References


