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Deriving the Superficial Order of Mandarin Chinese Sentential Final Particles: A Feature-Equilibrium Perspective

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Abstract

The main goal of this work is to offer an analysis concerning the distribution of Sentential final particles (SFP) in Mandarin Chinese in terms of the Symmetric Syntax formulated by Narita and Fukui (2022). We propose two alternatives of deriving the linear order of SFP that can satisfy the requirement of constructing Feature-Equilibrium (F-Equi), which is argued to play a significant role in narrow syntax computation by Narita and Fukui: (i) to construct {proposition}-equilibrium; (ii) to construct {*k*, R}-equilibrium.

Keywords: Sentential-final particles, Mandarin, Symmetrized syntax, F-Equilibrium

1. Introduction

The Symmetric Syntax (SS) enterprise initiated by Narita and Fukui (2022) can be seen as an accommodation to the Third-factor principle which dedicates that the formation of human language may subsume rules that are not specific to human languages (Chomsky 2005: 6). Based on this seminal theoretical reconsideration, Narita (2019) concludes that the pursuit of applications of the Third-factor principle amounts to a neo-Cartesian approach of science. In other words, human language is subject to the rules of physical world in addition to mental world.

The notion of symmetry explicitly affects the physical world, as Narita and Fukui (2022: xii) writes: "…[s]ymmetry is indeed an overarching constructive principle of the natural world". As the formation of either a celestial body or a snowflake exhibits the pattern of symmetry. The fundamental principle of the SS can be paraphrased as follows with the Merge-only hypothesis proposed by Chomsky (2010):

(1) Symmetry Principle

Merge yields symmetric output.

On the basis of (1), Narita and Fukui (2022) propose a construction of symmetry in which the output of Merge satisfies internal uniformity even though formal features are engaged, and they call this construction Feature-Equilibrium (F-Equi).

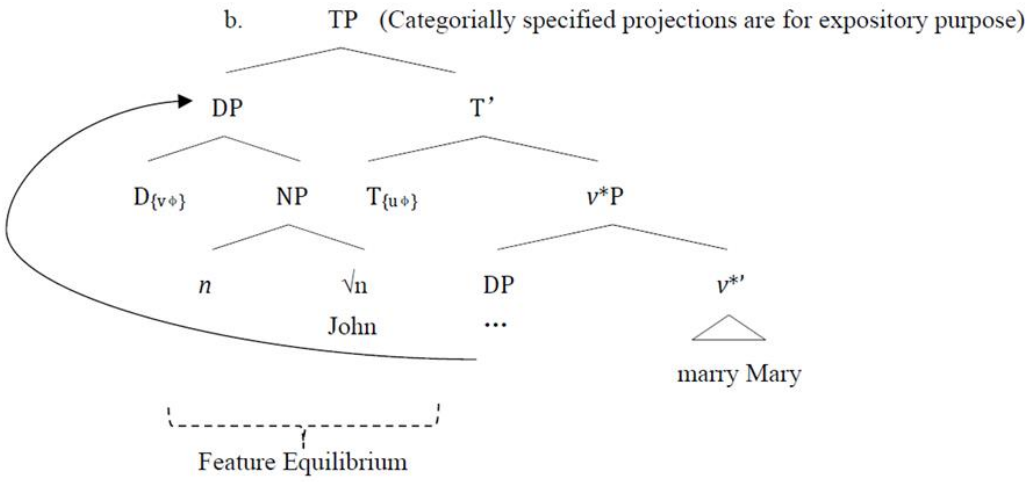
(2) Feature-Equilibrium

If a syntactic object (SO) is in the form of {X, Y}; {X, Y} is in an Feature-Equilibrium if X and Y share the same formal feature that can be detected via Minimal Search.

According to Narita and Fukui (2022: 41), only SOs that satisfy (1) can define a Transfer output (TO), suggesting an SO like $\{X_{[F]}, Y\}$ would be doomed to receive no interpretations at interfaces (a violation to the Full Interpretation regulated by Chomsky 1986). What follows can be seen as an attempt to form an F-Equi in English which surfaces as the so-called A-movement.

(3) a. John will marry Mary.

b. TP (Categorially specified projections are for expository purpose)



In the traditional approach, the raising of the subject is driven by the EPP (Extended Projection Principle) feature of the T head (Chomsky 1981), meaning that there must a lexical item located in the specifier of T (Note 1). However, as noted in Chomsky (2013), the checking of EPP is more like a statement instead of universal principle obtained through deduction.

On the contrary, an F-Equi that is constructed in conformity with symmetricity can give rise to (3a) without resorting to a priori statement. Note that if the subject in (3b) does not raise to the surface position, Minimal Search would unambiguously detect T which carries a formal feature (i.e., φ), yielding an asymmetric SO. According to the Symmetric Transfer Condition (STC, see Narita and Fukui 2022), only symmetric SOs can define a transfer output. The TP in question may then not be able to be transferred, leading to a derivational crash. This

explains why 'will John marry Mary' is out as declarative. To remedy, the subject DP with φ-feature raises to the vicinity of T, rendering a sister relation in which the DP and T can be found by Minimal search simultaneously (Note 2). The important point here is that the SO {DP, T'} can be defined as an F-Equi {φ, φ} and transferred to the interfaces.

It needs to be clarified whether such an SO can be properly transferred and interpreted at interfaces without the execution of Feature Valuation in terms of the traditional Agree theory (Chomsky 2000, 2001). An unvalued feature (e.g., T{uφ}) would by definition cause derivational crash if transferred. According to Narita and Fukui (2022: 99-100), they make the following clarifications: (i) altering the value of a formal feature would end up in the violation to Strict No-tampering Condition; (ii) in accordance with the symmetric principle formalized in (1), the two φ features are equally treated in interfaces. Additionally, this problem can be solved if we adopt the assumption of Epstein, Kitahara and Seely (2016) that the valuation can be carried out after narrow syntax.

With the establishment of the theoretical context, I will next turn to the distributional oddity of Chinese SFPs and show how can the SS provide a plausible reasoning.

2. The Inconsistent Head-Parameters

It is generally accepted that Chinese is a head-initial language (Huang 1995), thus it would be only natural for one to assume that SFPs do not behave otherwise if SFPs are treated as heads (Hsieh 2005; Cheung 2014; Paul 2014). However, to maintain the correct surface order, we have to assume that Chinese is a language that blends the head-final and head-initial properties, because SFPs uniformly appear at the end of a clause, as exemplified in (4), which is not a satisfying goal to pursue.

(4) Zhangsan chi-le pingguo ne.
ZS eat-ASP apple SFP
'Zhangsan ate some apples.'

Assuming that SFPs are generated inside the VP seems to solve this problem. Still, it will run into question as it lowers SFPs, particles that link an utterance with the discourse, down to the layer of argument. In fact, SFPs are typically argued to be located in the articulated CP (Rizzi 1997) in the literature.

Sybesma (1999) makes an insightful hypothesis that Chinese is a head-initial language with SFP being externally merged into derivation. The surface word, however, roots in the raising of the entire TP to the specifier of SFPs, as illustrated below:

(5) $[_{CP}$ TP C' $[$C-SFP$_{\{Q\}}$ $[t_{[TP]}]]]$

As to the motivation for such movement, Sybesma suggests that the Q-operator within an interrogative adjoins to TP rather than a wh-phrase.

The raising of the TP may be attributed to the need to check the formal feature the SFP bears (probably {Q}). Nonetheless, Sybesma's analysis is not impeccable. First, as he admits, this

raising-based analysis can only be applied to interrogative SFP. Second, his approach is contingent upon an operator-variable binding within the TP, suggesting the indicative TP also contains a {Q} feature, which is a doubtful move. In fact, wh-phrases cannot cooccur with the interrogative SFP as illustrated in (6).

(6) Zhangsan chi-le shenme ma?
ZS eat-ASP what Q
"Did Zhangsan eat anything?"

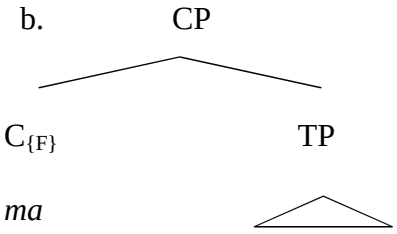
Crucially, note that the wh-phrase in (6) can only be construed as existential, meaning there is no such Q-variable binding. Therefore, Sybesma's (1999) analysis calls for revisal.

In the forthcoming sections, I attempt to deduce the correct surface word order of SFP in Chinese in terms of the F-Equi proposed in Narita and Fukui (2022).

3. Complement-Raising Triggered by F-Equi

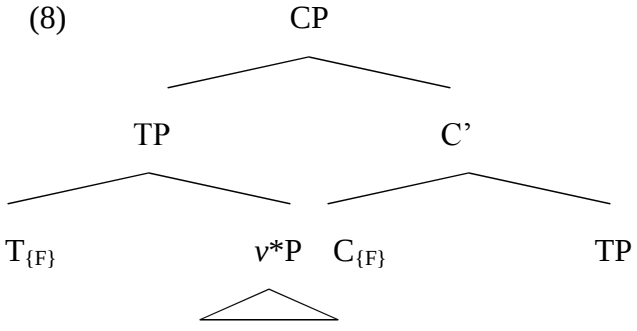
With the principle of (1) in mind, we may notice that the external merger of an SFP would unbiasedly result in an asymmetric SO, as schematized in (7):

(7) a. Zhangsan chi-le pinguo ba.
ZS eat-ASP apple SFP
'Zhangsan ate apples'

b.


$T_{\{F\}}$…Zhangsan chi-le pingguo

What is shown in (7b) is that the Minimal search will first find the C head, failing to form an F-Equi. Since only SOs that are symmetric may be fed into interfaces, the derivation in (7b) can never be transferred. Thus, I argue the complement TP must be raised to [SPEC, CP] to form an F-Equi in the spirit of Sybesma (1999) in the shape of (8) (Note 3).

(8)


Zhangsan chi pingguo

In (8), following the raising of TP, the formal feature embedded in T and C respectively can be detected simultaneously, hence be integrated into an F-Equi. However, there is still a crucial question we need to answer: how can we ensure the features shared by T and C are identical? In the discussion of Narita and Fukui (2022), the F-Equi on the clausal level is exemplified by a wh-interrogative, rendering an {Q, Q} equilibrium. However, this cannot lead to the right analysis for Chinese indicative clauses. Hereby, I will propose two alternatives to integrate the formal features of T and C into an F-Equi: (i) assume {F} as {Proposition}; (ii) assume a {*k*, R} configuration is involved.

The first approach can be traced back to Lyons (1977), Drubig (2001) and Huitnik (2008) in which a TP is considered to be on par with a proposition. As Drubig (2001: 16-17) notes, epistemic modal auxiliaries are extra-propositional. In addition, Tsai (2015) suggests that such auxiliaries are located above TP in Chinese. It is then safe to conclude that TP represents the proposition in Chinese and assume T head carries {vProposition} feature. On the other hand, SFPs, in contrast to TP, are obviously extra-propositional. In other words, SFPs do not affect the truthfulness of the clause, which is a universal trait observed in many languages. Haegemann (2014: 127) points out that SFPs (including sentential-initial ones) have the function to anchor the speech act, which contains the indicative proposition, to discourse. Therefore, we consider SFPs merged to C to have {uProposition}. If this analysis is on the right track, the F-Equi constructed in (8) can now be specified as $\{C_{\{uProposition\}}, T_{\{vProposition\}}\}$, yielding an SO that can define a transfer output.

One may wonder, in accord with the Distributed Morphology presumed in Narita and Fukui (2022: 46), only formal features are visible in narrow syntax, whereas {Proposition} seems more like a semantic one. As to this matter, there may be two escape-hatches: (i) semantic features are not completely inert in narrow syntax, as discussed in Yang and Lin (2020); (ii) sentences with SFPs seem to have gone through different syntactic derivations than those without. If the assumption that SFPs have uninterpretable {Proposition} is correct, it may explain the root restriction (Edmonds 1970) imposed on clauses ended with SFP, as illustrated in (9):

(9) Wo xiangxin[ta mai-le che (*ne)].
I believe he buy-ASP car SFP
"I believe that he has bought a car."

(9) is grammatical only when the SFP *ne* is interpreted as adjoined to the matrix clause or ellipted (see Miyagawa 2022 for a superordinate analysis). Assuming clause with SFP is represented as an F-Equi in narrow syntax can neatly account for this fact, because as soon as an F-Equi is formed, it can define a transfer output. By the time when the next phase-head is merged (*v** of the matrix clause), the entire embedded CP would be transferred and can no longer participate in further computations (Phase Impenetrability Condition, Chomsky 2007). It is then expected that with the formation of $\{C_{\{uProposition\}}, T_{\{vProposition\}}\}$, transfer may be applied to the derivation, whereas if there is no SFP in the first place, the transfer of the embedded clause will be procrastinated until the appearance of the matrix *v**, which possibly

carries {uProposition} that is responsible for the selectional requirement. A remaining issue is that how can we deal with an SFP-less clause (either root or embedded). My suggestion is that {Proposition} on T will be activated in narrow syntax only if there is an uninterpretable counterpart, which must ultimately delete before transfer. Thus, the activation of {Proposition} on T is indispensable for the derivation to be convergent. Such feature stays inert otherwise (i.e., syntactically invisible).

Our second approach that may offer plausible account is adapted from the {*k*, R} equilibrium proposed in Narita and Fukui (2022: 43). This configuration is, by definition, formed by externally merging a Categorizer (*k*) with a Lexical root (R). This merger can be exemplified by the formation of the verb *chi* 'eat':

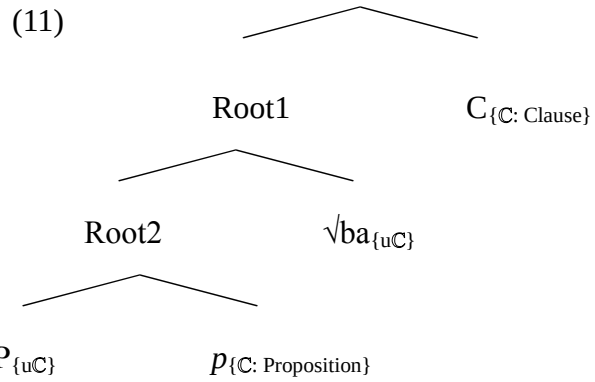
(10)

v √chi

{ℂ: V} [uℂ]

As depicted above, the v head carries the specified {Category} feature, while the semantic root has a non-specific one. The minimal search can detect them at the same time, rendering a symmetric SO. In the same spirit, we attempt to reanalyze the merger of SFP and TP as a variant of {*k*, R} configuration in line with the Word-internal Comp-to-Spec Movement Hypothesis (Narita and Fukui 2022: 90), which implies that the formation of a lexical item can be undertaken through internal merge as well. The overall idea is that an SFP-ended clause is seen as a sole lexical item formed with two other lexical items. In such way, (7a) may be decomposed as shown in the following scheme:

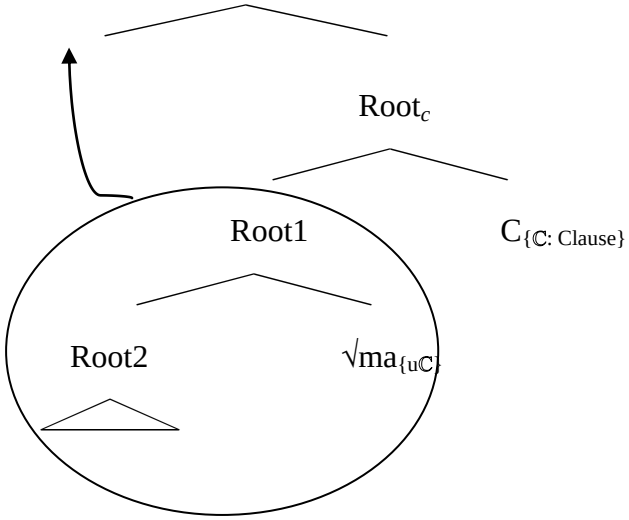
(11)



In (11), the entire TP and the SFP is decomposed into a {*k*, R} configuration respectively. Notably, the semantic segment of TP (√TP) and its categorizer can construct a symmetric {ℂ, ℂ} equilibrium. As to the SFP, we assume it is the lexical root √ba that enters the derivation on its own, attaching to the SO previously formed. The categorizer would then merge to the system with the appearance of the specifier of √ba. However, the categorizer and the lexical root of the SFP cannot be detected simultaneously as $C_{\{ℂ: Clause\}}$ would be unambiguously identified by the Minimal Search. In order to integrate $C_{\{ℂ: Clause\}}$ into an equilibrium, the most straightforward way would be executing the internal merge of the complement of $C_{\{ℂ:}$

$_{Clause\}}$ as illustrated in (12).

(12)



In the wake of such Comp-to-Spec internal merge, the {ℂ}-features can now be integrated into an equilibrium, because they are equally embedded. What is important is that the correct surface order can be obtained.

One may wonder if it is possible to build a {*k*, R} equilibrium with basic settings without resorting to internal merge on lexical level. We believe it is possible and here is how: in the diagram of (13), we assume TP to be the Categorizer of a proposition, and SFP to be the lexical root. Despite that this move may seem stipulative, there are empirical supports to it. First, as shown above, TP is the syntactic representation of the proposition, and SFP-less clause is perfectly natural in Chinese, whereas SFP can never be used independently, as in (14) (Note 4).

(13)

TP √ma

{ℂ: Proposition} [uℂ]

(14)*Ma.

Therefore, TP is assumed to have a valued *propositional categorizer feature*. In addition, according to the Labeling Algorithm (Chomsky 2013, 2015), whatever is first detected by the Minimal Search in an SO is the label of it. In effect, the label constitutes the interpretation of such SO in the Conceptual-Intentional interface. In the case of Chinese SFP clauses, SFP would be identified as the label of the entire clause, which symphonizes with our assumption that SFP, assumed to be the lexical root, embodies the semantic content of the lexical item.

To sum up, it seems that the TP and an SFP can be integrated into a {ℂ, ℂ} equilibrium regardless whether it is single or double layered, which could ultimately define a transfer output. In addition to the previously discussed {C$_{\{uProposition\}}$, T$_{\{vProposition\}}$} F-Equi, we have

witnessed two distinct F-Equi formations. Most importantly, we can now derive the correct surface order of SFP without stipulating a mixed head-parameters designation.

Before ending this section, it should be pointed out that there is another theoretical advantage of our alternatives. Abels (2003) argues the Comp-to-Spec movement should in principle be prohibited, as this kind of movement is too 'local'. In other words, such operation can barely affect whatever is transferred to semantic components in the absence of feature-triggered motivation. However, under the assumption that the raising of TP to the Spec of SFP aims to form an F-Equi, the seemingly local movement would be endorsed with significant semantic impact: it allows the SO to be transferred to semantic (as well as phonetic) interface.

4. Conclusion

The unique distribution of SFPs in Chinese can be desirably accounted for under the theoretical system proposed by Narita and Fukui (2022). The discrete head-parameters observed in argument layer and SFP layer in Mandarin Chinese can receive uniform explanation if our proposal, which claims the TP would raise to the specifier of SFPs to form an F-Equi, is on the right track. Specifically, we offer two different formulae of equilibria: (i) {*v*Proposition, *u*Proposition} equilibrium based on the propositional nature of TP as well as the proposition-truthfulness-irrelevance of SFPs; (ii) {ℂ, ℂ} equilibrium (single or double-layered), in which the entire clause is decomposed into a categorizer and a lexical root. In the single-layered {*k*, R} configuration, SFPs are assumed to be lexical root while TP to be categorizer. In the double-layered {*k*, R} configuration, both TP and SFPs are disassembled into subordinate {*k*, R} configuration, where the equilibrium is formed via Comp-to-Spec movement.

It should be noted that linear order is treated as a peripheral respect of human languages in Narita and Fukui (2022), as only the derivations in terms of narrow syntax, instead of SEM/PHON-mappings, take on the effect of the Symmetry Principle. Thus, it would not be surprising that our approach of legitimizing the superficial distribution of Chinese SFPs be regarded as having trivial significance. However, in that case, how could one explain why is it always impossible for SFPs to appear at Sentence-initial position? In our F-Equi approach, there is no need to leave this conundrum to the post-syntax stage by adding extra theoretical apparatus to PHON-components. In fact, the phenomenon that SFPs are obliged to adjoin to the right of an CP can be reduced to the simple requirement of forming a symmetrical/legit Transfer Output. By doing so, not only the Symmetry Principle is observed, but also the scopal relation, in which SFPs with expressive value scope over a proposition with truthfulness, obtains.

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Glossary

ASP=aspect; SFP=sentential-final particle

Notes

Note 1. See Miyagawa (2010: Cpt 3) for a reanalysis of EPP-checking requirement.

Note 2. Murphy and Shim (2020) also argue that being equally embedded has significant effect on semantic components.

Note 3. It should be pointed out that Narita and Fukui (2022: 14) discard the notion of Specifier as it distinguishes two subcomponents of an SO that is generated by Merge. The resurrection of Specifier is for expository purpose.

Note 4. Chomsky (2008) proposes that a proper derivation must contain an intact C-T-*v configuration. One piece of evidence comes from the fact that the φ-feature in English must be transmitted to T from C, demanding a full-fledged C-T system. On the other hand, since Chinese is a φ-less language, even though one can presume that there is a C above an SFP-less clause, its function must center on the definition of phasehood. Whether it has category feature is an open question.

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