

7 Sentence-Final Particles

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1 Introduction

The term “particle” is commonly used in a rather broad way to refer to syntactically independent, invariant grammatical elements, which are characteristically small in size and sometimes difficult to define in terms of morpho-syntactic category. All languages have certain elements that are naturally referred to as particles, ranging from interjection-like discourse particles, through interrogative and modal particles, to verbal and nominal case particles, but some languages seem to display a much richer inventory of such morphemes than others, and encode a wide variety of syntactic and semantic functions in the use of particles of different types. In Chinese there is both a general, high frequency of occurrence of particles in sentences and significant diversity in the types of particles available for use, with particularly interesting and complex patterns instantiated by the range of elements collectively referred to as “sentence-final particles” (henceforth SFPs). This chapter presents an overview of the phenomena of SFPs in Chinese, with a primary focus on Mandarin and Cantonese and additional discussion of Taiwanese Southern Min, where the majority of research on the syntax and semantics of SFPs has thus far been carried out. Section 2 provides an introduction to the types of element that typically occur as SFPs in Chinese, and considers the ways that these SFPs contribute semantically and pragmatically to the meaning of the sentences they occur in. Section 3 then turns to aspects of the syntactic analysis of SFPs, and the potential correspondence of SFPs with certain meanings to an array of functional projections present in an expanded C-domain in Chinese, as suggested in a number of recent works (Sybesma and Li 2007; Law 2004; B. Li 2006; Paul to appear). Section 4 adds further perspective on such issues with a review of syntactic and phonological evidence bearing on the underlying position of SFPs in clausal structure, and the question of whether CP-level functional

projections in Chinese are head-final or head-initial categories (Cheung 2009; Simpson and Wu 2000; T.-H. J. Lin 2010). Concluding remarks and suggestions for future research are given in Section 5.

2 Common properties of Chinese SFPs

Past descriptions of SFPs in Mandarin, Cantonese, and other varieties of Chinese have regularly highlighted a number of properties that such elements display that in some way distinguish them from apparently similar phenomena in other languages. As implied by the term “sentence-final particle,” SFPs are phonologically small elements, most frequently monosyllabic, which typically (and in most instances must) occur in sentence-final position. They are used to communicate a range of discourse-sensitive meaning relating to speaker attitude and “emotional coloring” (Matthews and Yip 1994), force of assertion, evidentiality and clause-type, along with various other semantic and pragmatic factors that are sometimes difficult to pin down. Examples of a number of frequently occurring SFPs in Mandarin are given in (1–4) below, from Li and Thompson (1981):

- (1) ta chu qu mai dongxi le
 he exit go buy thing SFP
 “He’s gone shopping.”

- (2) ta hen hao kan ba
 s/he very good look SFP
 “S/he’s very good looking, don’t you agree?”

- (3) ni hao ma
 you good SFP
 “How are you?”

- (4) xiaoxin ou
 careful SFP
 “Be careful, ok?”

Concerning the observation that SFPs are commonly restricted to occurring in root/matrix clauses, it has regularly been suggested that this is because many SFPs are speaker-oriented in nature, and subordinate clauses frequently disallow the embedding of elements encoding speaker-anchored perspective. Law (2002: 385) notes that “this is . . . reminiscent of other speaker-oriented elements, e.g. sentential adverbs, which must occur in the root clause.” An illustration of the unavailability of an embedded clause interpretation of an SFP in a two-clause structure is given in (5) from Law (2002: 386). Here the epistemic force of Cantonese *gwaa3* indicating likelihood can only apply to the content of the root clause (the

act of "saying") and not the embedded clause (the proposition that Billy might go to Paris):

- (5) Mary waa Billy wui heoi Baalai gwaa3.
 Mary say Billy will go Paris SFP
 "Mary probably said that Billy will go to Paris."

Formally, it has been proposed in a number of works that (most) SFPs are introduced in C(omplementizer) positions which are only projected in matrix clauses. There are, however, some exceptions to the root-only patterning of SFPs. While the Mandarin SFP *le* resists embedding in certain clause types (e.g., relative clauses: Paul, to appear), it can occur in conditional clauses, sentential subjects, and clausal complements of verbs of communication:

- (6) Ni weishenme mei gaosu wo [xiao-zhang bu qu Beijing le]?
 you why not tell I principal not go Beijing SFP
 "Why didn't you tell me that the principal is no longer going to Beijing?"
 (Paul, to appear)

- (7) ni chi duo le, jiu duzi teng ou.
 you eat much SFP then abdomen hurt SFP
 "If you eat too much, you'll have a stomach ache." (Li and Thompson 1981)

Similarly, Matthews and Yip (1994) note that the Cantonese SFP of reported speech *wo* can occur sentence-internally, preceding the clause reporting the statement, and Law (2002) adds that other often sentence-final particles that do not encode speaker attitude, such as Cantonese *zaa3* ("only") and *tim1* ("also, even") may also allow for certain embedding. Such exceptions apart, a general consequence of the property that most SFPs are anchored to the speaker or the discourse situation is that SFPs normally only occur in colloquial spoken Chinese and not in formal speech or writing.

A second, important property of SFPs in many varieties of Chinese is that SFPs can occur multiply in a single sentence, clustered in a sequence at the end of a sentence, as illustrated in Mandarin (8) and Cantonese (9):

- (8) ta bu hui da-ying ni de le ba.
 he not will promise you SFP SFP SFP
 "He won't promise you now, don't you think?" (Chao 1968)

- (9) keoi lo-jo daai-jat ming tim ge la wo
 s/he take-Asp first place SFP SFP SFP SFP
 "And she got first place too, you know." (Matthews and Yip 1994)

The possibility of such multiple SFP sequences characteristically distinguishes Chinese from many other languages in which just a single particle-like element

occurs optionally in sentence-final position. Significantly, when more than one SFP does occur in a single sentence in Chinese, the SFPs are generally constrained to follow a strict linear ordering, and very little in the way of re-ordering is permitted. Such sequencing restrictions among particle clusters have been interpreted as support for a "SplitCP" analysis of SFPs in Chinese, in which each SFP occupies a distinct head position in a scattered C-domain, as will be discussed further in Section 3 (Law 2002; Li 2006; Sybesma and Li 2007; Huang 2007; Paul to appear).

Third, a number of relevant observations have been made about phonological properties of SFPs in Chinese. It has been noted that such elements are frequently de-stressed and neutral in tone (Li and Thompson 1981), but also prosodically integrated into the sentence they combine with, and are not set off from the main sentence by any pause intonation, unlike question particle "tags" in languages such as English (e.g., "John saw you, right?"; Matthews and Yip 1994). When SFPs occur in sequences, a further consequence of their weak phonological nature is that SFPs may often undergo fusion with each other, as for example where the combination of Mandarin *ba* or *le* and *ou* results in fused *b'ou* and *l'ou* (Chao 1968), and the hypothesized fusion of many SFPs in Cantonese (Matthews and Yip 1994; Sybesma and Li 2007). Finally, it has been suggested that there are also fully non-segmental SFPs in Chinese, consisting in the addition of high or low tones to other SFPs in systematic ways (Chao 1968; Matthews and Yip 1994; Sybesma and Li 2007). For example, Matthews and Yip (1994) report that there are high tone and low tone variants of various SFPs in Cantonese and the former are regularly more tentative while the latter are more assertive. For Mandarin, Chao (1968: 812) suggests that final rising and falling intonations should also best be treated as distinct SFPs in which the tone "resides parasitically on the last morpheme by prolonging it."

With regards to the meaning contribution and pragmatic function of individual SFPs, there is a general convergence of analysis on a number of common particles, while the core function of other SFPs remains disputed. For example, the characterization of the Mandarin SFP *le* offered by Li and Thompson (1986) as signaling a "Currently Relevant State" is fairly widely adopted. For Li and Thompson this means that "*a state of affairs has special current relevance with respect to some particular situation*" (p. 240). The latter can be the present (often, by default, if no other situation is mentioned), but also a past situation, resulting in a pluperfect type interpretation (10), or alternatively a hypothetical/future situation (11).

- (10) nei-ge shihou juede you yidian e le
 that-CL time feel have a.little hungry SFP
 "We felt we had become hungry at that time."

- (11) xia-ge yue wo jiu zai Riben le
 next-CL month I then at Japan SFP
 "Next month, I'll be in Japan."

There is also much agreement that the Mandarin SFP *ba* has the core function of soliciting agreement and/or the approval of the hearer, as suggested by Li and Thompson. This function results in *ba* frequently being used in light commands, suggestions (12), and the expression of opinions seeking confirmation by the hearer, as in example (2) above.

- (12) *zou ba*
go SFP
"Let's go!"

A third common SFP in Mandarin, *ma*, is similarly accepted by most as a question particle signaling a yes/no question (of a less neutral type than A-not-A questions), though this has been challenged in B. Li (2006) and an alternative view of *ma* expressed.

- (13) *ta shi Zhongguo ren ma*
s/he be China person SFP
"Is s/he Chinese?"

With other frequently-occurring SFPs, such as *a* and *ne* in Mandarin, there may be less clarity and agreement on the core function of the particle, if indeed a single core function does exist. Considering *ne*, Chao (1968) suggests that the particle has three functions: (i) aspectual marking of a continued state, (ii) assertion of a significant degree (equivalent to English "as much as" in "It's as much as 100 feet deep"), and (iii) signaling speaker interest in "additional information" (similar to the effect of English "even" and "too" in "They even have a swimming pool too"). Chao identifies a separate, homophonous particle *ne* (P6) as a marker of questions and mild warnings. Re-assessing the patterning found with *ne*, Li and Thompson (1981: 300) attempt to collapse both of Chao's *ne* particles (P6 and P7) and their different functions into a unique characterization and single, broad function of "Response to Expectation." They suggest that in declaratives "*ne* has the semantic function of pointing out to the hearer that the information conveyed by the sentence is the speaker's response to some claim, expectation, or belief on the part of the hearer," and when *ne* occurs as a question particle in *wh* and A-not-A questions, it performs an essentially parallel function, communicating: "In connection with your previous claim, expectation or belief, let me find out/ask you . . ." Li (2006) also offers a unique, broad description of the function of *ne* as an SFP, which is argued to underlie all of the different uses earlier identified by Chao, but which is rather different to the characterization in Li and Thompson (1981). Li proposes that the use of *ne* has to do with the speaker's attitude towards the propositional content of the utterance, and the speaker "considers the information that is being claimed to be unusual or of particular importance" (p. 12). Li specifically argues against the analysis of (a separate) *ne* as a clause-typing question particle, contra Cheng (1997), and that questions accompanied by *ne* are simply "more intensified than counterparts without *ne*" (p. 14) conveying a strong enquiry

rather than being a more plain and neutral question. In both declaratives and questions, Li views the contribution of *ne* to be uniform, signaling that the speaker considers the content of the statement or question to be extraordinary and of particular importance.

Whether it is possible to arrive at a convincing uniform analysis of *ne* in all its occurrences might seem to remain open as a question. However, a consideration of the different approaches to *ne* in just the three works referred to here serves to illustrate a quite general issue and tension that arises in the analysis of various SFPs – whether it is necessary to assume multiple, homophonous SFPs in certain instances, each particle having a different function, or whether a unique particle can be posited to exist with an underlying, broad meaning that may be applied in a range of different contexts. In a cartographic approach to the functional structure potentially projected in clauses, such issues are important, as they bear on the identity of functional projections that can be argued to be present in a language. For B. Li (2006), for example, *ne* is uniformly an instantiation of Evaluative Mood, whereas for other non-uniform approaches to *ne* it might be seen to lexicalize a range of different functional heads, including Aspect, Force (as a question particle), and possibly one or more types of Mood.

With the Mandarin SFP *a*, such questions become even more acute, as Chao (1968) identifies ten distinct functions it may have, ranging from use as a marker of questions, commands, exclamations, reminders, warnings, to occurrence in topic enumeration, and vocative address. As with *ne*, there is the attempt to see a single core function present in all its more specific uses, in both Li and Thompson (1981) and B. Li (2006), though the core functions proposed in the two works again seem to be rather different in character. The former authors suggest that *a* is a particle which is regularly used to reduce the forcefulness of the command, warning, question, and so on it occurs with, whereas the latter work presents *a* as: “a discourse marker, which functions to highlight the relevance of the utterance in which it occurs to the discourse context . . . when an utterance is not obviously relevant to the discourse unit, the particle of relevance is especially needed to exhibit the speaker’s effort to make his utterance relevant to the given context” (p. 50). For Li, this results in a decision to identify *a* as the instantiation of a functional category “DiscourseP.” Given this difference in assessment of the core property of *a* (and for other views on *a* with useful insights, see Wu 2004), conclusions about *a*’s functional identity must still remain rather tentative at present, as with a number of other versatile SFPs whose meaning is not yet fully agreed upon.

While much work has been devoted to the intensive study of a relatively small group of SFPs in Mandarin, important research has also been carried out on the significantly larger number of SFPs which occur and are a regular feature of spoken Cantonese (Kwok 1984; Luke 1990; Fung 2000; Law 2002, 2004; Li 2006; Sybesma and Li 2007). Estimates of the precise number of SFPs in Cantonese vary, but Sybesma and Li (2006) note that there may well be over 40 SFPs used by speakers of Cantonese. A number of works suggest that very many SFPs in Cantonese, like certain particles in Mandarin, are fused forms that consist in two or more meaningful sub-components. One main, ambitious aim of Sybesma and

Li (2007) is to see how these SFPs can be systematically broken down into sub-parts which regularly have the same functions, and then assign the sub-parts to a position in the syntactic structure, building very substantially on other past work oriented in a similar way (e.g., Fung 2000). To this end, the (mono-)syllables of the range of SFPs considered are dissected into initials, rhymes, codas, and tones, and each element is analyzed for its potential meaning contribution in different, complex SFPs, allowing Sybesma and Li ultimately to isolate 13 "minimal meaningful units/MMUs." For example, the six-membered "g- family" of SFPs is examined (*ge2*, *gaa2*, *ge3*, *gaa3*, *gaak3*, *gaa4*), and it is noted that all six particles have in common that they involve: "asserting (or questioning the assertion of) the relevance to the current conversation of the statement they are attached to" (p. 1744). The SFP *ge3* is taken to be the base, an "actuality marker," "asserting that the statement to which it is added is highly relevant to the current conversation," paraphrasable as "It is a relevant fact that . . .," and all other g- initial SFPs are analyzed as consisting in *ge3* plus some other component of meaning: *gaa3* is *ge3* assertion + surprise or indignation, *gaa4* converts a *ge3* statement into a question, *ge2* as in Fung (2000: 161) is said to convey "the speaker's reservation or uncertainty about the situation," and hence lower the force of assertion, and *gaa2* communicates "doubt on the part of the speaker" concerning a fact that appeared to be relevant to the current situation. The initial g- is consequently taken to be an MMU that has the regular function of asserting the relevance of a statement.

Sybesma and Li work their way through the range of initial consonants, vowels, tones, and codas present in SFPs, and arrive at functional designations for each, though in some instances with greater ease than in others. The full inventory of minimal meaningful units is as shown in (14).

(14) Minimal Meaningful Units/MMUs in Cantonese (Sybesma and Li 2007: 1773)

Initials: g(e)3: asserting relevance
 l: indicating realization of state
 m: yes/no question marker
 n/l: evaluative marker
 z: marking restriction

Rhymes: aa: smooth-alerting
 e: suggestive
 o: marking noteworthiness
 aa4: [+q]

Codas: k: common intensifier

Tones: 1: indicating "forward-looking," marking "hearer-orientation"
 4: marking "speaker-orientation"
 5: evidential marker

On the basis of such elements, Sybesma and Li effectively show that they are able to characterize and break down 30 of the most commonly used SFPs in Cantonese. The analysis of the MMUs in (14) is also used to argue for an explicit functional structure in the Cantonese clause, as will shortly be discussed in Section 3.

3 SFPs and the structure of the C-domain in Chinese

Since the late 1980s, there has been a fairly widely adopted assumption that question particles such as Mandarin *ma* are instantiations of a complementizer/C position.¹ Following Rizzi's influential (1997) work on the extended structure of the left periphery, a number of authors have quite naturally sought to analyze sequences of SFPs as the heads of multiple functional projections in a split-CP approach to Chinese, these including Law (2002, 2004) on Cantonese, Li (2006) for Mandarin, Cantonese, and Wenzhou Chinese, Huang (2007) on Mandarin, Sybesma and Li (2007) for Cantonese, and Paul (to appear) on Mandarin. This section considers the range of proposals made for an articulated C-domain in Mandarin and Cantonese based on the observations and argumentation present in these works.

Considering the sequencing of SFPs in Cantonese, Law (2002) suggests that two dedicated functional projections need to be recognized to model particle clusters in Cantonese, and labels these SFP₁ and SFP₂. SFP₁ is presented as the equivalent of Rizzi's ForceP in the C-domain, hosting particles that encode speech acts such as the question particles *aa4*, *maa3*, and *me1*, and speaker-oriented modality, including *aa3* softener, *ge3* "assertion," *gwaa3* "probably," *lo1* "obviousness," and *wo5* "hearsay." SFP₂ hosts a smaller class of particles: the two focus particles *zaa3* "only," and *tim1*, and inchoative/present relevance *laa3*. Law suggests that SFP₂ can iterate, so that two instantiations of SFP₂ can occur, whereas the members of SFP₁ are in complementary distribution and consequently there can only be one occurrence of SFP₁ in a clause. (15) is an example of three SFPs occurring in a single sentence, *tim1* and *zaa3* from SFP₂ preceding *me1* from SFP₁:

- (15) *keoi zung heoi zo Baalai tim1 zaa3 me1?*
 s/he also go Asp Paris SFP SFP SFP
 "Did s/he also only go to Paris?"

Reflecting on patterns in Mandarin some years later led B. Li (2006) to propose a considerably more articulated C-domain structure for SFPs in Mandarin (and then also for Cantonese and Wenzhou Chinese), as illustrated in (16), showing the positions assumed to be occupied by the Mandarin SFPs *a*, *ma*, *ba*, *ne*, *le*, and *de*, as well as high and low tones as non-segmental SFPs.

- (16) SFPs in the Mandarin C-domain²
 Epistemic > Discourse > Degree > Evaluative > Deik > Fin
 H, L a ma/ba ne le de

The structure and labeling of the positions in (16) is based on (i) the common/core interpretations of the SFPs as analyzed by Li, and (ii) the observation of sequences of SFPs occurring in a strict linear order. It should be noted that the left-to-right sequencing of projections and particle in (16) is a representation of the assumed *hierarchical* ordering of these elements, and in linear terms is actually the opposite of the relative linear order of the SFPs in clauses. Hence, SFPs to the right in (16) precede those to their left (*de > le > ne > ma/ba > a*). It should also be noted that not all particle sequences that might be expected to occur given the structure in (16) actually do occur. For example, sequences consisting in *de le ne ba* are not possible. However, Li argues that the separation of the particles into the structure in (16) can be justified by considering the range of sequences which are acceptable.³

Sybesma and Li (2007: 1778) also present a highly articulated picture of the C-domain in Chinese, based on their analysis of Cantonese SFPs in terms of MMUs, as reviewed in Section 2. The set of MMUs identified in (14) is suggested to correspond to an array of nine functional projections in the C-domain, as shown in (17), in which FinP is the structurally lowest, and EpistemicP the highest in the clause:

- (17) g3 = FinP
 l = DeikP, establishing a link with the speech moment
 z = FocP “only”
 aa = DiscourseP – has a discourse function, smoothing the sentence into the discourse and alerting the hearer to the relevance of its content
 o = Mood_{informative}P
 n/l = Mood_{evaluative}P
 5 = Mood_{evidential}P
 m, aa4 = ForceP, in yes/no questions
 k = EpistemicP – emotional involvement
 1, 4 = EpistemicP – speaker/hearer orientation

Note that some of the MMUs in (14/17) may fuse with each other phonologically to result in complex SFPs (e.g., *g3 + aa + k = gaak3*), but that (17) also allows for multiple, phonologically independent particles to co-occur in a single string (with the insertion of default vowels where necessary), as for example in *ge3 zek1* or *laa3 wo3* and so on. The actual linear sequencing of elements in (17) is that higher MMUs in the column in (17) precede lower MMUs, either fused together in a single particle (e.g., *l + aa4 = laa4*) or making up separate particles (e.g., *ge3 laa1*). As described in Section 2, Sybesma and Li arrive at the set of MMUs in (14) and their posited correspondence to the functional projections in (17) as a result of (i) the regular semantic and pragmatic functions that the MMUs are argued to have when they occur within SFPs, and (ii) their physical linear sequencing relative to each other both in complex fused SFPs and sequences of separate SFPs. Sybesma and Li point out that (14) and (17) are well-supported by the patterns observed

in Cantonese, but that the full set of combinations that (17) might be expected to permit do not occur, for reasons that are not yet clear but which might be explained with further consideration of the kinds of pragmatic/semantic combinations that would hypothetically arise, some perhaps being quite unnatural.

A fourth characterization of SFPs in terms of a split CP structure that can be mentioned here is Paul (to appear), which focuses on Mandarin. Paul analyzes SFPs in Mandarin as corresponding to a more reduced C-domain than that assumed in Li (2006) and Sybesma and Li (2007) for Cantonese, and posits three functional projections hosting SFPs, as illustrated in (18): C-lowP, ForceP, and AttitudeP. Such an analysis is presented as a modern re-interpretation of a “traditional” division of SFPs into three distributional classes with fixed relative orders made by linguists such as Zhu Dexi (1982: ch.16):

(18) (low C) C ₁	C ₂ (force)	C ₃ (attitude)
<i>le</i> currently relevant state	<i>ma</i> interrogative	<i>ou</i> warning
<i>laizhe</i> recent past	<i>ba</i> imperative	(<i>y</i>) <i>a</i> astonishment
<i>ne</i> ₁ continued state	<i>ne</i> ₂ follow-up question	<i>ne</i> ₃ exaggeration

Notable in Paul’s analysis is that *ne* is posited as occurring in three different forms, in each of the three C-head positions, rather than as a single SFP (as in Li 2006), and that *ma* and *ba* are viewed as instances of Force, recognizing their roles as question particle and imperative marker, respectively, rather than assuming a different “degree-marking” function (Li 2006). As with other studies arguing for a split CP approach to SFPs, the structured C-domain in (18) is shown to allow for a straightforward account of certain ordering restrictions among SFPs, for example [. . .] *le ba* vs. *[. . .] *ba le*; [. . .] *le ne*₂ vs. *[. . .] *ne*₂ *le*; [. . .] *ba ou* vs. *[. . .] *ou ba*. However, questions still remain about how to account for other sequences of SFPs that might be generated by (18) but which are judged as ill-formed by many speakers, such as ^{??}[. . .] *ne*₁ *ma/ba*. The treatment of *ma* as a question particle in Force also raises the question of why it may not occur in embedded questions, unlike similar elements in other languages, such as Japanese *ka*.⁴ Paul’s suggestion here is to posit that CP is never split in the way of (18) in embedded clauses, but one might still wonder why Force should not be projectable in non-root contexts in Chinese, as it is assumed to be embeddable in other languages. Possibly an adjustment could be made to (18) allowing for *ma* to instantiate the functions of two adjacent heads – both Force and Attitude (perhaps via movement between the two positions), and attribute the root-only restriction on *ma* to the unacceptability of embedding elements encoding aspects of speaker attitude. The assumption that a “single” SFP might correspond to more than one position in a C-domain hierarchy such as (16) or (18) might similarly be exploited to provide accounts for other non-attested sequences of SFPs.

A further, important, theoretical issue that is brought up by the data relating to SFPs and sequences of SFPs in particular, concerns the directionality of headedness in CP-level projections. Early treatments of SFPs such as *ma* as C (omplementizer) elements assumed that CP should be analyzed as a head-final category in Chinese,

due to the position of such C heads following their TP/IP complements, and a head-final analysis of CP continues to be assumed in various more recent works, for example Aldridge (2011). However, it has regularly been noted that a head-final CP is not what one would expect in an SVO language with fairly typical head-initial properties present elsewhere in the clause (see Simpson and Wu 2000 for a review of the relevant patterns). There is consequently an interesting tension between the clause-final linear positioning of SFPs and other general word order characteristics of Chinese, which appears to be in conflict with the “universal” Final Over Final Constraint (FOFC), posited by Biberauer, Newton, and Sheehan (2009), that a head-final CP structure actually cannot embed a head-initial TP within any language. Faced with the “problematic” issue of SFPs in Chinese and other head-initial SVO languages, Biberauer *et al.* (2009) speculate that SFPs are categorically deficient and not integrated into the syntax of clauses, hence not genuine counter-examples to the FOFC. However, Paul (to appear) argues convincingly that SFPs are indeed syntactically integrated with the clause in Chinese and so remain as potential evidence against such a principal being universally valid (see also Aldridge 2011). Quite independent of the FOFC, the issue of head-complement directionality raised by the existence and patterning of SFPs both singly and in sequences is interesting and challenging, and will be considered further in Section 4. With regard to the works reviewed here, it can be noted that Li (2006), Sybesma and Li (2007), and Paul (to appear) all make a deliberate point of not committing to a particular view about head-complement directionality in the C-domain, and the structures argued for in (16–18) are explicitly characterized as being representations of *hierarchical* structure, rather than claims about any underlying left-to-right ordering of the functional projections hosting SFPs.⁵ In Section 4, we consider a number of syntactic arguments (and one phonological one) that have been brought to bear on the derivation of clauses containing SFPs, and then revisit the significance of particle clusters described in the current section.

4 Issues in the syntactic derivation of SFPs

In addition to studies of the pragmatic and semantic functions of SFPs and their potential correspondence to positions in an extended C-domain, reviewed in Section 3, there are also works that develop syntactic analyses of particular SFPs or constructions containing SFPs that offer insights into the underlying syntax of SFPs. This section offers an overview of four papers that all set out to probe the derivation of certain particle constructions: Cheng *et al.* (1996), Simpson and Wu (2000), Lin (2010), and Cheung (2009).

4.1 Markers of negation functioning as question particles

One type of particle occurring in sentence-final position that has not been mentioned so far is the use of a marker of negation in the final position to signal a yes/no question, as illustrated in Mandarin (19) from Li (2006):

- (19) ta qu xuexiao bu?
 s/he go school Neg
 "Is s/he going to school?"

Cheng *et al.* (1996) argue that the way that such "Negative Particle Questions/NPQs" are derived in Mandarin is via movement of the particle to sentence-final position from a sentence-internal base position, where negation markers regularly occur. Such a hypothesis is supported by the observation that the type of negation marker that occurs in a sentence-final position signaling a question is dependent on the form of the verb: *bu* is used with bare verbs and modals with a present and future-oriented interpretation, *mei-you* with predicates with a past time interpretation. It is suggested that the negative element combines with the predicate in the regular clause-internal position of negation, the form of the negative element being determined by the verb/modal in the VP, and then moves to the C-domain, to mark the sentence as a yes/no question, as represented in (20) modeling (19):

- (20) ta bu_i qu xuexiao bu_i?



A further piece of potential support for such an analysis is the fact that clause-internal negation can never be overt in NPQs in Mandarin, as shown in (21), suggesting that this position has been occupied and then vacated by the marker of negation that occurs in sentence-final position:

- (21) *ta bu qu xuexiao bu?
 s/he Neg go school Neg
 Intended: "Is s/he not going to school?"

It can also be noted that the marker of negations in sentence-final position are in complementary distribution with other question particles such as *ma*, indicating that the former seem to target the same Force-related position, which is potentially occupied by the latter:

- (22) *ta qu xuexiao bu ma/ma bu?
 s/he go school Neg SFP/SFP Neg

If this analysis of Mandarin NPQs is correct, it indicates that particles occurring in sentence-final position may appear in the C-domain either as the result of direct base-generation in such a position, or as a consequence of movement from some lower position.⁶ In this regard, the final particles in Mandarin NPQs would have a syntactic derivation similar to that proposed for the Japanese question particle *ka* in Hagstrom (1998), which is argued to originate in a sentence-internal position and subsequently raise to clause- or sentence-final position.

4.2 *The origin and grammaticalization of SFPs: a study of Taiwanese kong*

Simpson and Wu (2000) is a study of the Taiwanese Hokkien (henceforth "Taiwanese") SFP *kong*, illustrated in (23):

- (23) Asin m lai kong
 A-sin Neg come SFP
 "A-sin's not coming."

The original source of the SFP *kong* is the verb *kong* "to say," which still occurs in Taiwanese as a regular, independent verb:

- (24) A-hui **kong** A-sin m lai.
 A-hui say A-sin Neg come
 "A-hui said A-sin is not coming."

Cross-linguistically, it is quite frequent for general verbs of "saying" to undergo grammaticalization as new complementizer elements. This often occurs in the re-analysis of serial verb constructions consisting in two verbs of communication (one more specific, the second less specific) as sequences of verb + complementizer:

- (25) Verb1 Verb 2 → Verb (1) Complementizer
 shout say → shout that

Re-analysis subsequently allows for new complementizers of this type to be used with other verbs of cognition with no literal meaning of "saying." This is currently occurring in Mandarin (26) with *shuo* "to say" being re-analyzed as a new complementizer, and has also occurred with *kong* in Taiwanese (27):

- (26) Zhangsan xiang **shuo** Lisi bu lai le
 Zhangsan think **that** Lisi Neg come Asp
 "Zhangsan thinks Lisi is no longer coming."

- (27) A-hui siong **kong** A-sin m lai
 A-hui think **that** A-sin Neg come
 "A-hui thought that A-sin was not coming."

The position of these new C⁰ elements preceding their TP complements clearly suggests that CP is a head-initial category in Chinese, which would be in harmony with its general SVO head-initial patterning. What is puzzling and in need of some explanation is how *kong* has also grammaticalized as a particle in sentence-final position. Simpson and Wu point out that if it is assumed that *kong* in these

instances is also occurring in a C^0 position, it is rather unexpected that this C^0 should follow its TP complement.

Simpson and Wu show that a consideration of the particular patterns of *tone sandhi* which occur in *kong*-final sentences offer interesting clues to the syntactic structure of such sentences. The basic patterning of tone sandhi in Taiwanese (as discussed in more detail in Chapter 18) is as follows. The right edge of XPs is marked via the pronunciation of the final syllable in the phrase in its underlying lexical/citation tone, and all other syllables that precede this phrase-final syllable undergo tone sandhi, shifting their citation tone to some other tone following automatic conversion rules (see Chapter 18 for details). Consequently, the absence of tone sandhi in a syllable regularly signals that it occurs at the right edge of an XP, and the occurrence of tone sandhi indicates that a syllable/word is phrase-medial and not at the rightmost boundary of a phrase.

The sandhi patterns that are found in sentences where *kong* occurs as a complementizer preceding its TP complement are as expected, and are illustrated and described in (28) and (29), where a bolded dot represents that tone sandhi has applied in the previous syllable, and a # sign encodes the right edge of a sandhi domain/an XP and the failure of the preceding element to undergo sandhi modification.

- (28) A•-hui # siong• **kong•** A•-sin # m• lai #
 A-hui think that A-sin Neg come
 "A-hui thought that A-sin was not coming."

- (29) *kong* > TP C > TP order, tone sandhi changes as expected
 (i) The final syllable in TP does not undergo tone sandhi – it marks the right edge of TP.
 (ii) *kong* in C^0 does undergo tone sandhi – it does not mark the right edge of any XP.

(30) and (31) show and describe the sandhi patterns that are present when *kong* occurs as an SFP following the TP in sentence-final position:

- (30) A•-hui # siong• A•-sin # m• lai # **kong•**
 A-hui think A-sin Neg come SFP
 "A-hui thinks A-sin is not coming."

- (31) TP > *kong* TP > C order, unexpected tone sandhi changes
 (i) The final syllable in TP does not undergo tone sandhi.
 (ii) *kong* does undergo tone sandhi.

Significantly, both sets of sandhi patterns (29) and (31) are the same, which in (31ii) is quite unexpected, as *kong* in (30) occurs at the right edge of an XP, in sentence-final position, so would not be expected to undergo tone sandhi – no other elements in such a position show sandhi modification. Simpson and Wu note that

the SFP “odd” ordering of [...TP *kong*] results in sequences which for tone sandhi purposes behave *just as if they were* [...*kong* TP] sequences in the “regular” (head before complement) C-TP sequencing. Simpson and Wu consequently suggest that: (i) TP>*kong* forms are derived from regular *kong*>TP sequences via raising of the TP to a SpecCP position, and (ii) tone sandhi modification applies prior to TP-raising, as part of cyclic Spell-Out, in which phonological processes pattern as if interwoven within the syntactic derivation (Chomsky 1998). This allows for a straightforward explanation of the unexpected tone sandhi patterns in sentences where *kong* occurs in sentence-final position, and simultaneously offers an account of the otherwise unexpected clause-final position of *kong* (given other evidence that CP seems to be head-initial) – underlyingly, a CP headed by *kong* is indeed head-initial, but may appear to be head-final on the surface due to the occurrence of TP raising.

Concerning the meaning of *kong* as an SFP, and the motivation for the TP-movement, Simpson and Wu note that the use of *kong* results in an interpretation of emphatic re-assertion of the contents of the sentence similar to English: “I’m telling you X!” (X = content of the sentence), as illustrated in (32). In such situations, the content of the TP is presupposed information, and the TP-movement can be viewed as a form of topicalization or de-focusing p-movement (Zubizarreta 1998), which puts the element *kong* in prominent sentence-final position, where it is interpreted as indicating focused assertion.

- (32) A•-sin# e• phoe# sia• kong• bin•a•chai# beh• lai# kong•
 A-sin Gen letter write that• tomorrow want come SFP
 “A-sin wrote that he will come tomorrow.”
 → “A-sin has written in his letter saying he is coming, so why do you think he won’t come?” / “A-sin wrote that he’s coming, I’m telling you!”

Patterns relating to tone sandhi, combined with information about the source of an SFP and its patterning in pre-grammaticalized form, therefore lead to the hypothesis that the final position of an SFP may result from movement of its clausal complement, and an underlying head-initial CP structure. In Sections 4.3 and 4.4 we will now see two further arguments for such a possible approach to the positioning of SFPs.

4.3 SFPs and a locality effect: Lin (2010)

Lin (2006, 2010) includes a novel exploration of the underlying syntax of the SFP “current relevance” *le* via careful attention to locality phenomena. Lin actually argues that the SFP *le* is located in the head of a relatively low AspectP whose complement is vP, rather than being high in the C-domain as in many other works, and proposes that the AspectP is a head-initial category. The linear ordering of vP complement before *le* is suggested to be due to leftwards movement of the vP to the Specifier of the AspectP in order to satisfy encliticization requirements of the particle *le*, facilitated by the addition of an edge feature in Asp⁰ when the latter is

lexicalized by *le*. When *le* is not present in Asp⁰, it is suggested that no vP movement is triggered. The interesting data that is used to support such a view comes from asymmetries in the well-formedness of the *wh* adjunct *zenmeyang* “how” and *zenme* “how” in questions with and without a final *le*. Lin notes that when no *le* is present, as in (33), either *zenmeyang* or *zenme* can occur, and the resulting *wh* questions are fully acceptable. However, when *le* appears, questions with *zenmeyang* become unacceptable, and those with *zenme* are only acceptable with a “why” not a “how” interpretation, as illustrated in (34).

- (33) a. Zhangsan *zenmeyang* *xiu* *che*?
 Zhangsan how repair car
 “How does Zhangsan repair the car?”
 b. Zhangsan *hui* *zenme* *lai*?
 Zhangsan will how come
 “How will Zhangsan come?”
- (34) a. *Zhangsan *zenmeyang* *xiu* *che* *le*?
 Zhangsan how repair car SFP
 Intended: “How did Zhangsan repair the car?”
 b. Zhangsan *zenme* *lai le*?
 Zhangsan why/*how come
 Only: “Why did Zhangsan come?”
 Not: “How did Zhangsan come?”

Lin argues that the patterning in (33) and (34) can be explained in a principled way if it is assumed that vP movement occurs in (34) but not (33). He notes that there is a prominent analysis of *wh* adverbials like *zenmeyang* (Tsai 1994) that such elements undergo LF movement to Comp for their licensing, unlike nominal *wh*-phrases which may stay *in situ* and be bound by an operator. If such LF movement of *zenmeyang* is preceded by movement of the vP containing the adverbial to a specifier position, when *le* is present, this will result in a locality violation, attributable to general freezing effects, and the ban on moving an element out of a constituent that has itself already undergone movement (Collins 2005). When the SFP *le* does not occur, there is (by hypothesis) no vP raising, and *zenmeyang* is free to undergo LF extraction, resulting in the well-formedness of sentences such as (33a). With regard to the *wh*-adjunct *zenme*, this element can occur either as a VP-level adverbial, meaning “how,” or as a higher TP-level adverbial with the interpretation “why.” If the SFP *le* occurs, it is expected that the “how” interpretation of *zenme* should not be possible, due to the freezing effect capturing VP-level *zenme* within the moved vP. However, the “why” interpretation is expected to remain possible, as *zenme* in the higher position is not within any moved constituent. The patterning in (34c) bears these expectations out, and the paradigm provides interesting support for the view that the sentence-final position of SFPs may indeed be due to movement of at least part of the preceding clause to the left of the particle, masking an

underlying head-initial projection and giving the surface appearance that SFPs project head-final structures.

4.4 *The Dislocation Focus Construction and SFPs: Cheung (2009)*

A third work which offers further, interesting insight into the structural position occupied by SFPs is Cheung's (2009) study of the Dislocation Focus Construction/DFC in Cantonese and Mandarin. In DFCs, which occur primarily in colloquial speech, the canonical sequencing of words in a sentence is inverted, and the initial constituents in a sentence appear sentence-finally, in the same relative sequencing that they have when occurring un-inverted in the neutral/canonical order of the sentence. Frequently, an SFP occurs in the middle of DFC sentences, instead of at the end of the sentence, where such elements otherwise regularly appear. Examples here will be provided from Cantonese; for illustrations of the DFC in Mandarin, see Cheung (2009).

- (35) a. Keoi zau-zo loeng go zungtau laa3. *canonical order*
 he leave-Asp two Cl hour SFP
 "He has left for two hours."
 b. Loeng go zungtau laa3 keoi zau-zo. *inverted DFC order*
 two Cl hour SFP he leave-Asp
 "He has left for two hours."

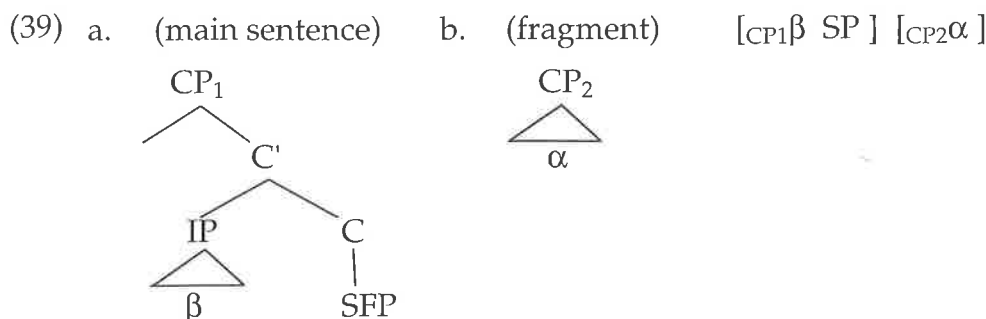
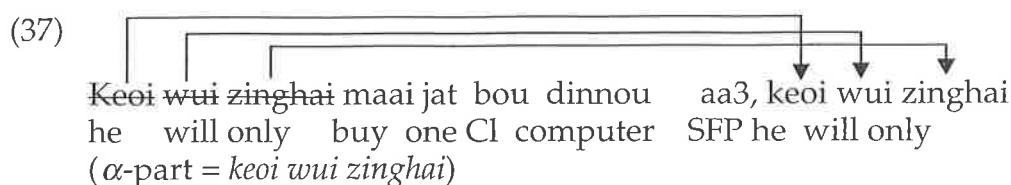
Cheung refers to the pre-SFP part of DFC sentences as the β -part, and the post-SFP part as the α -part respectively, as represented in (36), in which the β -part corresponds to constituents of different sizes: TP, VP, DP.

- (36)
- | | | | | |
|--------------------------|--|--|------|------------------------|
| β -part (TP) | | | SFP | α -part |
| Wui maai jat bou dinnou | | | aa3, | <u>keoi</u> . |
| will buy one Cl computer | | | SFP | he |
| β -part (VP) | | | SFP | α -part |
| Maai jat bou dinnou | | | aa3, | <u>keoi wui</u> |
| buy one Cl computer | | | SFP | he will |
| β -part (DP) | | | SFP | α -part |
| Jat bou dinnou | | | aa3, | <u>keoi wui maai</u> . |
| one Cl computer | | | SFP | he will buy |

In terms of information structure, the β -part either constitutes or contains the informational focus of the sentence, hence when a DFC serves as an answer to a *wh*-question, the element corresponding to the *wh*-phrase must occur within the

β -part. Prosodically, the α -part is regularly unstressed, and spoken at a faster tempo than the β -part, which tends to be better when heavy, DFCs with less heavy β -parts generally requiring more of a clear focus context to be licensed.

Cheung considers four possible syntactic analyses of DFCs: (i) leftward movement of the β -part from a base position following the α -part; (ii) rightward movement of each constituent in the α -part to a position following the SFP and β -part, as illustrated in (37); (iii) deletion of elements in a sequence of two identical sentences, as represented in (38); and (iv) the generation of the α -part as a parenthetical fragment juxtaposed with the β -part, which is generated without the constituents present in the α -part, as in (39):

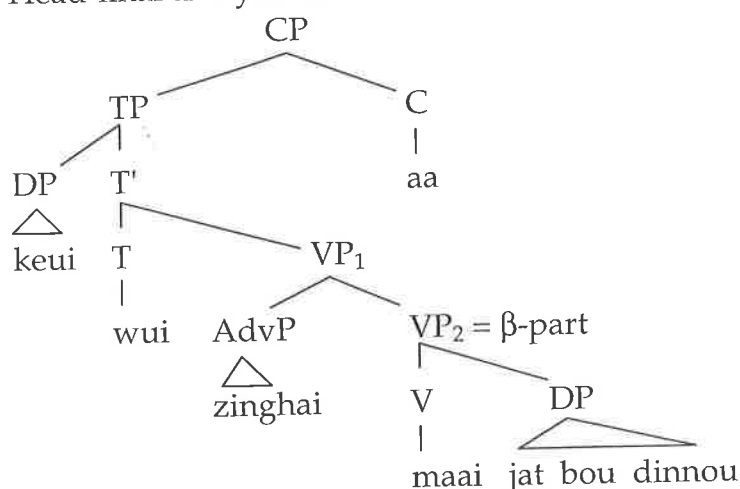


Cheung demonstrates very clearly that the latter three analyses all face major empirical problems or serious theoretical objections. For example, in a rightward movement approach, multiple rightward movements will often be needed to generate the linear word order, as seen in (37), as the α -part is generally not a constituent. Such movements will need to involve both phrases (e.g., the subject) and heads (e.g., auxiliary and main verbs), and be augmented by some special mechanism to guarantee that the words in the α -part occur in a sequence that mirrors the canonical order in non-DFC sentences. Concerning both (iii) and (iv) analyses, it is shown that neither of these approaches can capture the range of clear connectivity effects that exist between elements in the α - and β -parts of DFCs. These involve (i) scopal interactions between the adverb *zinghai* "only" in the α -part and an element in the β -part; (ii) the well-formedness of the adverb *doudai* "the hell" in the α -part when the *wh*-phrase it licenses occurs in the β -part; (iii) the legitimate occurrence of the adverb *cungloi* "ever" in the α -part when its

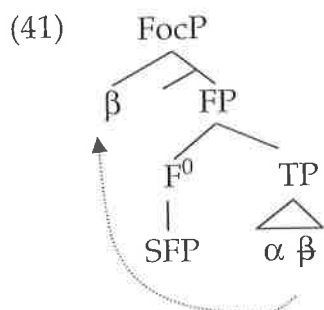
licensing negation occurs in the β -part, and (iv) Principal C violations which are present when an R-expression in the β -part is co-referential with the subject in the α -part.

Cheung is therefore led to conclude that an analysis in which the β -part moves leftwards as a single constituent over the elements in the α -part is the only realistically plausible account for DFCs, and shows how it can account for the connectivity effects in a simple way. Significantly, if SFPs are taken to be heads in the C-domain, the leftwards movement analysis of DFCs also forces the assumption that CP is head-initial, and that the SFP precedes the α - and β -parts in the underlying structure, as follows: [SFP α β], with leftwards movement of the β -part resulting in the surface sequence: [β SFP α β]. Were CP to be head-final, it would not be possible to account for the surface occurrence of the SFP between the β -part and the α -part in DFCs – the SFP would not be able to undergo leftwards movement together with the β -part, as an SFP in C^0 would never form a constituent with the β -part, as illustrated in (40), which shows the underlying structure for (37) with the SFP *aa3* in a hypothetical head-final C.

(40) Head-final analysis of CP



Cheung therefore suggests that the SFP is the head of a head-initial functional projection in the C-domain (simply labeled "FP"), and that the β -part of the sentence undergoes movement to the specifier of a Focus Phrase also located in the C-domain, to check focus features on the functional head Foc^0 , as schematized in (41).⁷ The range of properties that DFCs are noted to have are shown to be neatly captured by such a structure and derivation.⁸



The patterns found in DFCs consequently add further support for the view that SFPs are actually the X^0 instantiations of head-initial CP projections.⁹

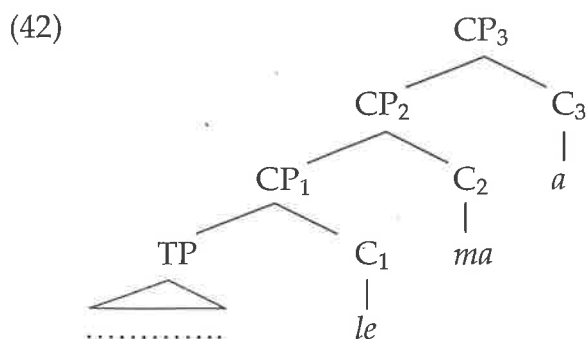
4.5 Revisiting sequences of SFPs

It is now appropriate to reconsider sequences of SFPs, and how the occurrence of clusters of more than one SFP may be interpreted from a structural point of view. In Section 3 we saw that a hierarchy of functional projections hosting SFPs in the C-domain has been proposed in a number of works, for example Paul's (to appear) C-low, ForceP, and AttitudeP in (18) repeated below, and Sybesma and Li's (2007) more articulated set of C-level projections in (17).

(18) (low C) C_1	C_2 (force)	C_3 (attitude)
<i>le</i> currently relevant state	<i>ma</i> interrogative	<i>ou</i> warning
<i>laizhe</i> recent past	<i>ba</i> imperative	(<i>y</i>) <i>a</i> astonishment
<i>ne₁</i> continued state	<i>ne₂</i> follow-up question	<i>ne₃</i> exaggeration

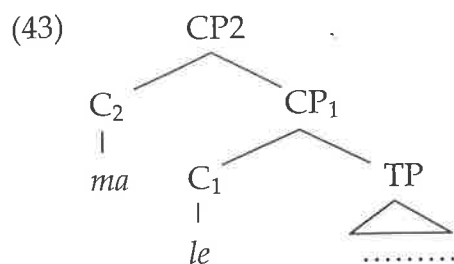
If we now reflect on how the *linear* sequencing of particles interacts with the relative *hierarchical* structuring of SFPs in functional projections, there are two main approaches that can be adopted to model strings of SFPs in the C-domain: a head-final modeling or a head-initial analysis.

Assuming that representations such as (18) provide an accurate encoding of the hierarchical relations present among SFPs and the functional projections where they occur, the fact that SFPs follow the linear sequencing of the columns in (18) could be captured quite simply in a uniformly head-final analysis of the C-domain, as illustrated in (42):



Alternatively, if a head-initial analysis of CP is entertained, given the argumentation reviewed in Sections 4.2–4.4, the modeling of sequences of SFPs becomes more complex and requires the assumption of potentially multiple occurrences of movement. (43) represents a hypothetical base structure for such an analysis, just making use of the two SFPs *le* and *ma* in a single sentence. In order to derive the surface linear order of [TP > *le* > *ma*], it seems necessary to assume that the TP complement of *ma* in C_1 first moves to the left of *ma* (perhaps to the specifier of

CP₁), and then CP₁ moves leftwards past *ma* in C₂, to a higher specifier position:
 step 1: [CP₂ *ma* [CP₁ TP_k *le* t_k]], step 2: [CP₂ [CP₁ TP_k *le* t_k]_m *ma* t_m]



There is also a third possibility that can be flagged, however, which would potentially reduce the complexity of the head-initial analysis. It is not inconceivable that, while the linear sequencing of SFPs in representations such as (18) is correct, assumptions about the relative hierarchical structuring of the projections might actually not be right, and it could be that the projection housing interrogative *ma* (for example) is in fact lower than that where *le* the marker of current relevance occurs – hence the hierarchy could in theory also be the reverse of that presented in (18). It is not clear how fully confident we can be at this stage that the range of speaker- and discourse-anchored SFPs should be structured relative to each other in a particular hierarchical way, given that their meanings and functions are sometimes hard to tie down. Supposing that the structural representation of (18) were potentially to be the opposite of that assumed in (18), then the derivation of multiple particle sentences might require just a single application of movement of the TP complement of C₁ to a landing-site to the left of the sequence of SFPs: [TP_k [CP₂ *le* [CP₁ *ma* t_k]]]. Such issues will benefit from further attention and discussion, as we note in the conclusion to the chapter below.

5 Summary and thoughts for future research

The general phenomenon of SFPs in Chinese is both striking and of great potential significance, and there is much that is positive that can be emphasized about the study of this area of the language. First of all, the richness of SFPs in Chinese provides a source of information and a possible window onto the structuring of the C-domain in a way that has not yet been observed or described to the same high degree in other well-studied languages.¹⁰ Second, much very valuable work has already been done attempting to establish the kinds of pragmatic and semantic functions that SFPs may have in Mandarin and Cantonese, and to a lesser extent in certain other varieties of Chinese. Third, recent years have seen interesting new explorations of the syntax and structural encoding of SFPs, particularly in Mandarin and Cantonese, laying out much highly valuable groundwork for future studies to build on. Among the various issues that future work will hopefully engage with are four areas of SFP-related research and theoretical enquiry that

clearly need more attention. Empirically, more detailed documentation and description of particle sequences needs to be established in Mandarin, Cantonese, and also other varieties of Chinese. Currently, the full range of permitted SFP sequences has not been established, despite predictions and expectations that a range of multiple SFP clusters should be possible. Clarifying which sequences can and cannot occur should help in understanding the set of C-domain functional categories that can legitimately project in a single clause. Further work probing the functional identity of SFPs as instantiations of the C-domain (e.g., as Force, Fin, Mood, etc.) also seems to be called for, so that patterns with SFPs can be more confidently related to studies of the cartography of the C-domain emerging from linguistic phenomena in other languages, and the issue of how “universal” the structure of the C-domain may be across different, unrelated languages. Third, it may be useful to investigate how information on the structuring of the C-domain provided by SFPs can be matched in Chinese with the ordering of functionally related adverbs, given the Cinquean (1999) view that adverbs are projected in the specifiers of functional heads and hence also offer information about the hierarchy of underlying syntactic structure. Finally, for those head-initial analyses positing the regular movement of clausal constituents in particle constructions, the issue of the *motivation* for such movement needs further consideration, and whether this can be attributed to focus, de-focusing p-movement, encliticization requirements of SFPs, or simply EPP/edge features introduced by SFPs, as has been suggested in various works.

NOTES

- 1 Paul (to appear) credits Lee (1986) as the first to propose this analysis.
- 2 Note that (16) is in fact a slight simplification of the larger C-domain structure proposed by Li (2006: 171), and omits positions that are not instantiated by SFPs in Mandarin, but are argued to be present and overtly filled in Cantonese, such as Evid, Epist₂, Mood, and Focus, or are taken to be present but not by any overt SFP material, such as ForceP.
- 3 Some of the particle sequences presented by Li as well-formed are, however, rejected by other speakers, calling into question some of the data supporting the elaborate structure in (16). For example, sequences of *ne ma/ba* are regularly felt to be unacceptable, and fused combinations of *ma/ba* and *a* as *maa* and *baa* do not seem to be commonly accepted.
- 4 Such a concern is given by Li (2006) as a reason not to analyze *ma* or *ne* as question particles, and leads to the different treatment of these elements by Li.
- 5 For example, in Sybesma and Li (2007: fn.49) it is noted that: “In this paper we do not go into the question of headedness. We do assume that (most of) the particles head their own projection, but whether these projections are head final or head initial is of no concern to us.” A similar statement also appears in Paul (to appear).
- 6 For a rather different view of the derivation and syntax of Mandarin NPQs, see B. Li (2006: ch.5).

- 7 When the focus is contained within the β -part, Cheung assumes that some form of feature percolation allows for movement of the larger, containing phrase, as occurs in focus constructions in languages such as Basque.
- 8 Additionally, Cheung's analysis results in interesting conclusions relating to the cross-linguistic phenomena of focus projection and nuclear stress, as discussed in Chapter 18.
- 9 A fourth work arguing for such a view is Hsieh and Sybesma (2006).
- 10 Certain languages of Southeast Asia show an interesting range of sentence-final particles, but these have so far not been described in any detail, nor has it been established whether particle clusters are possible in these languages.

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