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博士論文

漢語句法-言談介面研究

The Syntax-Discourse Interface in Mandarin

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學號: 100044801
研究生: 鄭偉成 (Wei-Cherng Sam Jheng)
指導教授: 蔡維天 博士 (Prof. Wei-tien Dylan Tsai)
吳曉虹 博士 (Prof. Hsiao-hung Iris Wu)

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THE SYNTAX-DISCOURSE INTERFACE IN MANDARIN

A Dissertation Submitted to the Institute of Linguistics in Partial Fulfillment of the
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in

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by

Wei-Cherng Sam Jheng

Dissertation Committee:

Wei-tien Dylan Tsai, Advisor, National Tsing Hua University
Hsiao-hung Iris Wu, Advisor, National Taiwan Normal University
I-ta Chris Hsieh, National Tsing Hua University
Wei-wen Roger Liao, Academia Sinica
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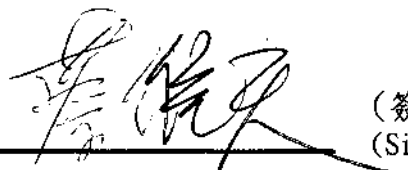
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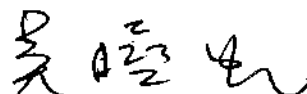
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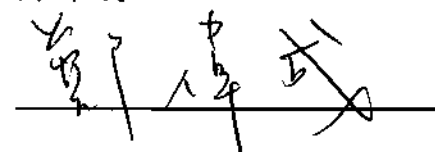
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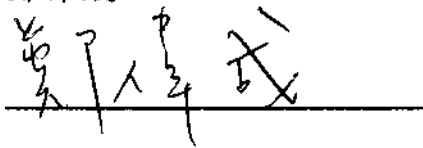
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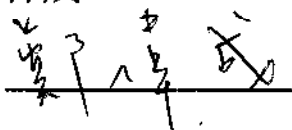
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Abstract

The Syntax-Discourse Interface in Mandarin

by

Wei-Cherng Sam Jheng

Submitted to the Institute of Linguistics on January 20, 2018 in Partial Fulfillment
of the Requirements for the Degree of Doctor of Philosophy in Linguistics

The goal of this dissertation is to investigate whether discourse notions are active in the syntactic computation or outside the domain of it. I document two phenomena in Mandarin, *Aboutness Topic* (AT) and *Nonsententials* (NS), whose interpretative import is acutely sensitive to the discourse context and needs to be syntactically substantiated in the articulated peripheral structure of CP/ ν P. In particular, I propose that there are two means to activate the syntax-discourse interface permitted by the computation system.

Mandarin AT has been discussed at great length in the previous scholarship, and its designated position and information structural properties receive a variety of analyses. Nonetheless, I offer novel observations showing that AT in Mandarin can be analyzed on a par with XP-split constructions, according to a battery of diagnostics and its information structural makeup. Following [Fanselow and Cavár's \(2002\)](#) analysis, I propose that AT results from successive feature-checking processes in which a XP, whose sub-parts are merged with two disparate features (topic and focus) in the numeration, permits its subparts to undergo feature checking in corresponding functional projections and to be spelt out differently in the left periphery of CP/ ν P. The case of AT concludes that topic and focus are accessible in the numeration and corresponding functional projections are merged for feature-checking purposes in order for the derivation to converge.

NSs, whose syntactic structure is considerably reduced, are able to encode clause typing information, illocutionary force and the involvement of SPEAKER and HEARER/ADDRESSEE. Following the line of reasoning in [Sigurðsson & Maling \(2009\)](#) and [Tsai \(2016\)](#), I propose that NSs have a fully-fledged peripheral structure of CP, according to the effects exerted upon their interpretation. Different from the feature-checking mechanism activated for AT, I argue that no discourse properties are accessible in the numeration and drive the derivation. Rather, a speech act layer, a supra-sentential layer, merges to and dominates ForceP, and is responsible for the encoding of the relevant discourse properties.

The two phenomena of inquiry suggest two means to activate the syntax-discourse interface. On the one hand, the syntax-discourse interface can be activated by merging lexical items with strong informational structural features that have to be checked by corresponding function projections in the periphery of CP/ ν P, along the lines of [Abob's \(2010\)](#) view that the interface starts with the numeration. On the other hand, a cluster of discourse properties, such as SPEAKER and HEARER/ADDRESSEE, cannot be treated as formal features driving the derivation and, however, can be concretized by another supra-sentential layer, the speech act layer. The two means are made available due to the analyticity of Mandarin syntax. The major consequence of this work is to show that the theory of discourse is closely tied to the architecture of grammar in general.

摘要

漢語句法-言談介面研究

鄭偉成

本論文研究言談訊息是否以形式特徵存在於句法運算系統裡。我探討漢語的關聯主題和非語句結構等兩種現象，指出其語意的詮釋性必須依賴言談語境以及透過補詞層和詞彙層的左緣結構來體現其句法特性。我進而主張漢語有兩種手段觸發句法-言談介面銜接。

漢語的關聯主題在前人文獻已經探討甚多，其句法位置和訊息結構特徵有著不同的分析。我提出新的觀察，指出漢語關聯主題應該分成三大類。我根據句法測試及其訊息結構主張漢語的關聯主題句應該視為 XP-分裂結句。我採用 Fanselow and Cavar's (2002) 分布刪除分析，提出關聯主題句是透過一連串特徵檢驗過程而生成的。XP 由兩個詞組所組成，此兩詞組在詞列階段已經和主題特徵與焦點特徵分別合併。在句法階段，則是分別在補詞層和詞彙層左緣功能投射組進行特徵檢驗。關聯主題句的生成顯示主題和焦點在詞列階段進入句法操作，透過特徵檢驗手段現行於句法結構樹上。

非語句的結構儘管缺乏完整的句法骨架，但是可以蘊含子句標示、施為念力以及說話者/聽話者等言談訊息。承接 Sigurðsson & Maling (2009) 和 Tsai (2016) 的精神，我指出漢語非語句有完整補詞層結構，以句法形式實體化言談訊息。然而，不同於施用於關聯主題的特徵查核機制，我主張言談訊息並非在詞列階段就以形式特徵存在，取而代之的是透過言談行為投影層，分別由兩個言語行為功能投射組組成，分別體現了說話者與聽話者言談中的攸關性。

本文所探討的兩種現象指出漢語擁有兩種手段使句法與言談銜接。第一種手段為在詞列階段，將訊息結構相關的特徵與詞彙項目合併。接著，在句法階段，透過在補詞層/詞彙層的左緣的相關功能投射組完成特徵檢驗。第二種手段則是透過言談行為投影層內的兩個言語行為功能投射組，將說話者與聽話者等相關言談概念，帶入句法層面。換言之，說話者與聽話者這兩種言談概念並非以形式特徵出現於詞列階段，而是由言語行為功能投射組來體現該概念。本文所提的兩種介面手段和漢語句法高分析性息息相關。除此之外，本文更進一步指出言談可以內化為語法的一部分。

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There are two things I have learned from writing this dissertation. First, I cannot predict what will happen though I think I am fully prepared for many things that are not under my control. All I can do is to do my part and stay away from these confounded nuisances. Second, I have to work on a topic by acting on my hunch. The genesis of aboutness topic discussed in this dissertation arose from a presidential campaign slogan by the DPP in 2012 while I was a second-year Ph.D. student at NTHU. A cluster of properties surrounding aboutness topic I observed were rather trivial on both empirical and theoretical grounds, though its analysis remained not materialized in the previous scholarship at that time, and later it was criticized by one professor for being nothing worth developing as a research paper. I left it aside until in 2015, when my advisor told me that there was something in it. I resumed the investigation of aboutness topic, and extended its scope with theoretical implications involved. To my surprise, writing a dissertation has never been a painful process for me, especially with a group of nice people and knowledgeable teachers that entered into my life in the past six years and had a profound influence on my research, my line of thinking and my mental development. It is not an everyday thing that one has to formally thank the important people in words. Nonetheless, it is about time for me to do so.

First and foremost, I am especially indebted to the members of my committee, Wei-tien Dylan Tsai, Hsiao-hung Iris Wu, I-ta Chris Hsieh, Wei-wen Roger Liao, Chung-Yu Barry Yang, and Chyan-an Arthur Wang for their comments that have both greatly influenced the development of this work and pointed out what can be further pursued in the future. Although I gained a great deal of knowledge through classroom discussions and seminar courses, I know how to be a linguist through meetings with these six individuals.

I was exceedingly lucky to have had Prof. Hsiao-hung Iris Wu, my former MA thesis advisor at NTNU, as my dissertation advisor. It was her that told me to push forward with my interest in aboutness topic and made me believe there was truly something worth pursuing and developing as a dissertation. Over the years, Iris has an incredible advisor to me in every regard. Her vast knowledge, generosity with her time to have meetings with me, caring and willingness to listen to my ideas with patience have been deeply inspiring. Every discussion meeting with her was rather joyful and always offered stimulation for new lines of thinking. I thank her for spending time with me on the back-and-forth of discussing every part of my dissertation and offering constructive and sharp comments on the work. In addition to being my dissertation advisor, she is also my mentor. I am deeply indebted to her for trusting me while I was on the verge of giving up the degree and helping me cope with the mess. While receiving her text message saying that she trusted me, I burst into tears while standing in front of the theatre. This is my first time that I felt myself so sissy. Nevertheless, I realized that I needed to pull myself together and write a good dissertation in return for her trust and time. I hope she knows how much I am grateful for being her student in my life.

It has been a privilege to have Prof. Wei-tien Dylan Tsai, the leading scholar in Chinese linguistics, as my advisor. He first introduced me to the cartographic approach to syntactic structure, and shared with me its explanatory power and adequacy in characterizing the syntax of Mandarin, which has greatly expanded my horizons and shaped my thinking

about the interface between syntax and other cognitive components. I appreciate his superb ability to always ask the right questions and see through the problems behind every analysis. What's more, he taught me that I should broaden my vision and horizon of everything, and should not be confined by mundane and trivial things. I thank him for being the most capable tour guide in America and in China, and introducing famous spots and sites to us. I am also grateful to him for giving me a hand while I needed urgent help with finishing my study. He just told me: This is what a teacher is for, to help students. His philosophy of teaching, life and research has served a great source of personal and professional growth to me.

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Prof. Wei-wen Roger Liao is the person I have learned most during the time I worked as his research assistant at Academic Sinica from 2013-2018. Every meeting with him was stimulating and thought-provoking. Many parts of this dissertation stemmed from the meetings with him over the past 3-4 years. I thank him for teaching me how to think critically about every paper I read and every fine-grained analysis I had taken for granted for a long time. He is in many ways a role model for me- his incredible ability to see through convoluted analyses and theories, and remain sensitive to the potential pitfalls of many well-established theories that no one is ever aware of, to the best of my knowledge. He taught me many things, both academic and non-academic, that I would not have had a chance to know and learn if I had not met him. His comments on my dissertation were constructive and pointed out several issues worth pursuing in the future.

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makes careful and thorough preparations for her classes and her presentations (as a presenter and a commentator). What impressed me deeply is that she always prepares PowerPoint slides and gives detailed, critical comments and a list of references, whenever she is invited to be a commentator. By the way, Prof. Liao is the first linguistics professor outside of my school that talked to me right after my first paper presentation at one conference in Taitung in 2010. She shared with me two relevant papers, *The Noun Phrase Accessibility Hierarchy Revisited: A View from Ergative Languages* and *A Brief Syntactic Typology of Philippine Languages*. As a young MA student, I felt so flattered and surprised. However, what surprised me is that I was lucky enough to attend her class six years later. Prof. Yi-ching Josephine Su first introduced me to the field of experimental syntax-semantic from a perspective of language acquisition and psycholinguistics, which has broadened my horizons of how to examine theoretical issues by employing experimental methods and tools. I thank her for bringing me to a kindergarten in Hsinchu to conduct an experiment that tested children's knowledge of focus, which gives me a chance to gain the hands-on experience of playing with kids and creating proper scenarios necessary for the experiment.

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Abbreviations

| | | | |
|---------|-----------------------|---------|-------------------------|
| 1SG | first person singular | HON | honorific |
| 3SG | third person singular | MOD | modifier |
| ACC | accusative | NEG | negator |
| AFF | affective marker | NOM | nominative |
| ASP | aspect | PART | particle |
| AUX | auxiliary | PASSIVE | passive |
| CL | classifier | PRE | present |
| COP | copular | PRF | perfective |
| D. PART | discourse particle | PROG | progressive |
| DE | de | Q | question |
| DET | determiner | REFL | reflexive |
| ERG | ergative | RESULT | resultative |
| EXCL | exclamative | SFP | sentence-final particle |
| FOC | focus | TOP | topic |

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CHAPTER 3

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1 Introduction

1. The synopsis: The division of labor between syntax and discourse

Since its inception, generative grammar has been reinforcing a ‘divide and conquer’ strategy (Folli et al. 2013), in accordance with which various linguistic phenomena are ascribed to modes of explanations that suggest a co-existence of a cluster of linguistic phenomena, some related to lexicon, some to sounds, some to meaning, some to structure, and some to other aspects of language-external systems. The strategy is embodied by the notion of linguistic levels and the relative autonomy of these levels. In the Minimalist Program (MP) (Chomsky 1995), a set of distinct levels are formalized as Lexicon, Syntax, Phonological Form (PF) and Logical Form (LF). A pressing question is whether these multiple levels of representation suffice to account for linguistic phenomena in a unified fashion without redundant postulations, and what each level of representation is responsible for. A mild sort of interface curiosity to ask is how these levels interact with each other: how is the output from one level of representation interpreted at the next level, and how does the output feed into the next level? And, how do these levels interact to produce a wide range of linguistic phenomena that non-theoreticians and *WYSIWYG* (*what you see is what you get*) linguists call ‘language’? Here for concreteness, suppose in (1) that a syntactic object β in the syntactic structure undergoes dislocation to the utterance-initial position and it is identified as serving the discursal role of topic in the corresponding information structure. This dislocation poses two questions. First, what triggers the dislocation, if this ‘operation’ does not induce any interpretative redundancies? Second, as visualized in (1), if there are two independent levels of representation, how does narrow syntax interface with discourse in the way that β is interpreted as a topic, which amounts to the encoding of ‘topic’ in information structure?

templates (such as topic-comment and focus-background) via a set of mapping rules to acquire a proper IS interpretation in its context.

This dissertation is set out to address the above issues by investigating two phenomena in Mandarin endowed with interface properties between syntax and discourse. Precisely, the phenomena in question are *Aboutness Topic* (AT) and *Nonsententials* (NS) in Mandarin, with the ensuing two preoccupations in mind: (i.) should syntax be the sole component in the sense of the Y-model of grammar (Chomsky 1995) assumed to offer an elucidation of restrictions surrounding the phenomena with an information structural or discursal import, as advocated within the cartographic approach (Cinque 1999 and subsequent work)? (ii.) are there motivations to minimize the role of syntax when the phenomena can be captured in a more comprehensive way by other components or more articulated architectures of grammar (Zubizarreta 1998; Reinhart 2006; López 2009, a.o.)? These questions have received constant attention over the years but a consensus remains. In this dissertation, I provide empirical and theoretical evidence in favor of the view that discourse-related notions are visible to the syntactic computations whenever they have corresponding functional projections in the ν P/CP left periphery. To add weight to this view, this dissertation attempts to cut across the division of labor between syntax and discourse by investigating two syntax-discourse construals. In addition, it has been argued that Mandarin, defined as a highly analytic language (Huang 2015), has a fully-fledged CP structure, consisting of an array of functional projections and serving the gateway between syntax and pragmatics/discourse (Tsai 2015a, 2015b). I think that Mandarin provides a good testing ground for the examination of the division in question.

In the following sections, I describe the questions at length by discussing the role of discourse with respect to various modules of grammar and spell out the reasons why discourse is worth discussing in relation to narrow syntax.

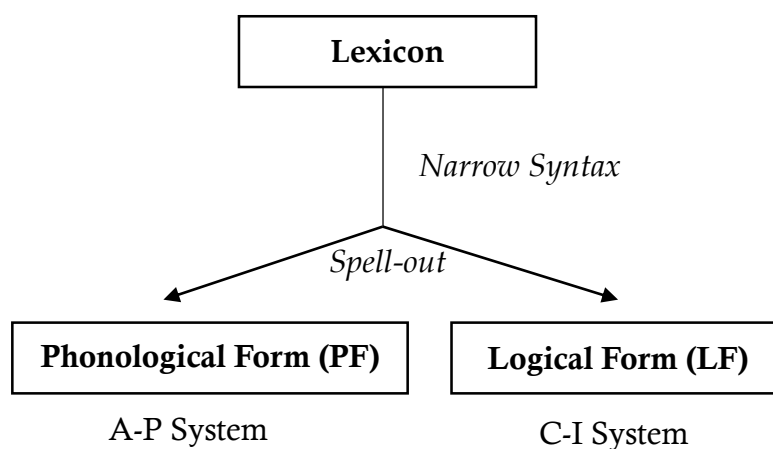
1.1 Discourse in the module view of grammar

To address these questions calls for a space for discussion on modules of grammar proposed in the previous scholarship. I narrow down the scope of current discussion by focusing on the role of discourse in various modules of grammar and point out the multiple character of IS.

A Y-model of the architecture of grammar in the advance of Chomsky (1995) assumes

that lexical items from the lexicon are generated via an operation *Merge* as interpretable expressions at both interface levels, as portrayed in (2). To dictate which types of expression are interpretable, Phonological Form (PF) that interfaces with the Articulatory-Perceptual (A-P) system and Logical Form (LF) that interfaces with the Conceptual-Intentional (C-I) system, are involved. (2) further shows that there is no apparent linking relation between PF and LF, and a pair of expressions are interpreted in the independent A-P and C-I systems. This amounts to a prediction that semantic features will not affect phonological representations. The Y-model of grammar represents a syntactic-centric view.

(2) Y-model of grammar (Chomsky 1995)

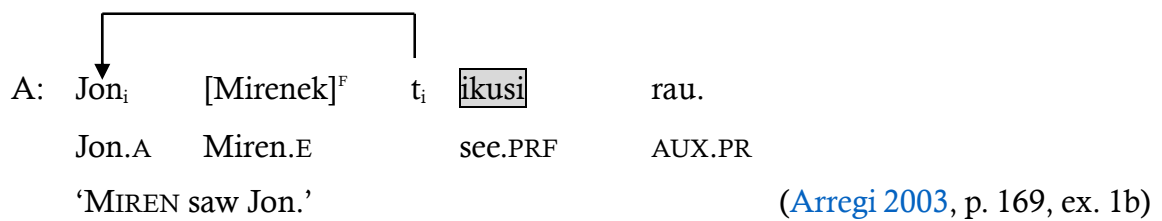


Nevertheless, according to the MP version of the Y-model of grammar, the discourse-related notions are not assigned to an independent level of representation, and considered ‘surface effects on interpretation’, as noted in (3). It follows that topic and focus are regarded as semantic features visible at the interface.

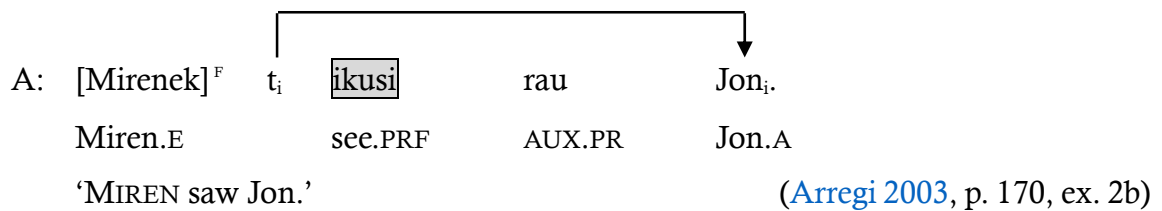
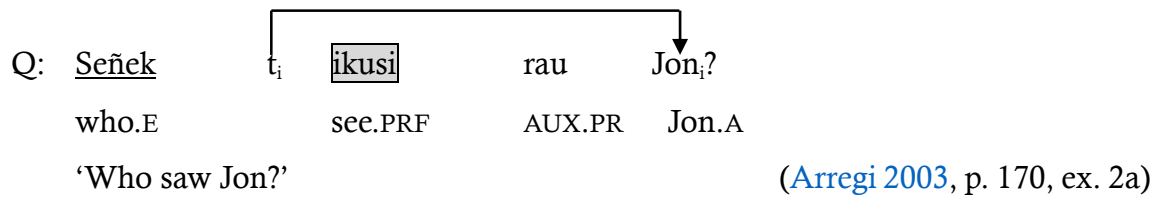
(3) ‘These are manifold, involving topic-focus and theme-rheme structures, figure-ground properties, effects on adjacency and linearity, and many others. Prima facie, they seem to involve some additional level or levels internal to the phonological component, postmorphology but prephonetic, accessed at the interface along with PF and LF.’

(Chomsky 1995: 200)

The Y-model is not tenable, however, in a way that it is unable to account for certain IS conditions only active at PF that drive seemingly narrow syntactic operations, a puzzle



b. Subject focus (narrow focus): Right dislocation of the object

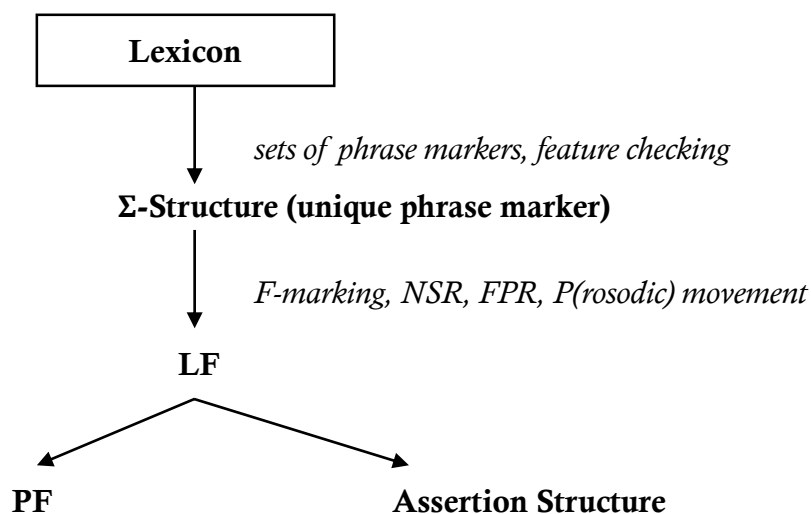


The Basque scrambling shows that focus, if treated as a feature of some sort, is satisfied outside syntax. This line of thinking indicates that focus is not encoded as a formal feature. Nor is active in the syntactic computation.

To circumvent the *look ahead* problem and to account for the fact that movement operations can take place at PF grant a necessity in further enriching the Y-model. Zubizarreta (1998) proposes a more articulated architecture of grammar, as depicted in (6). According to this model, the derivation unfolds with a set of phrase markers being created, one of which is obtained at the Σ -Structure. Operations, encompassing *F-marking*, *NSR*, *Focus-Prosody (FPR)*, and *P(rosodic) movement*, take place at the Σ -Structure. Subsequently, the derivation branches into two sub-branches, one that is to phonetically spell out the target derivation, and the other that adjusts IS of the derivation with the focus-presupposition partition encoded (Irurtzun 2009 for a critique of this model).¹

¹ Irurtzun (2009) points out that though the focally relevant operations take place in the stretch between Σ -Structure and LF, they are still employed to derive an intended representation at a later stage. It should be noted that there is no phonological representation or phonetic content at Σ -Structure and LF. Therefore, revising the Y-model still fails to solve the *look ahead* problem that all the operations taking place in the stretch are carried out to obtain an intended representation at a later point of derivation.

(6) Zubizarreta's (1998) mode of grammar

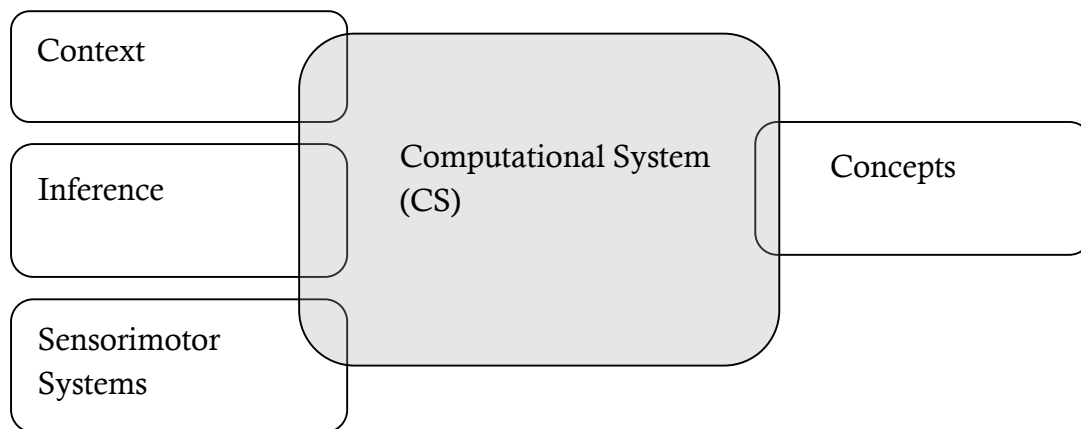


Revealing in this model is the *Assertion Structure* that is designed for information structural notions, which are integrated as part of narrow syntax. Besides, it is apparent from (6) that LF is the interface relating to PF and the Assertion Structure.

Reinhart (2006) proposes the idea of reference-set computation. The thesis in reference-set computation is that human language is optimally designed but the actual computation is far from perfect. Thus, when the output of the computational system fails to meet a certain interface need (the requirement of different contexts), some repair strategies are activated, including *Quantifier Raising (QR)*, *prosodic focus*, *stress shift*, the licensing and interpretation of anaphora, and etc. These repair strategies require constructing and comparing a reference set of alternative derivations and determine whether a repair operation is the only way to satisfy the interface requirements. These strategies are costly, but tolerated by the computational system, as they do not induce any interpretative redundancy. Granted reference-set computation, a computation proceeds over a set of $\langle d, i \rangle$ pairs, in which each pair is comprised of a derivation (d) and an interpretation (i). A derivation that includes an illicit and costly operation is permitted to yield a desired interpretation, if and only if there is no corresponding $\langle d, i \rangle$ pair with the same interpretation but a simpler derivation. Reference-set computation is global in a way that it needs to compare two or entire derivations and interpretations, and selects one of them in order to satisfy a contextual need and generate the proper IS of an utterance. As represented in (7), the notion of Optimal Design and reference-set computation is based

on the premise that syntax is a computational system (CS) that serves as an interface between several unconnected cognitive systems, including context, inference, concepts and sensorimotor systems. Of our concern in Reinhart’s module is that IS is not included in the CS, as it does not induce any interpretative redundancy. Rather, IS arises from the interface between the CS and other cognitive components (Horvath 2010 for the *Strong Modularity Hypothesis*).

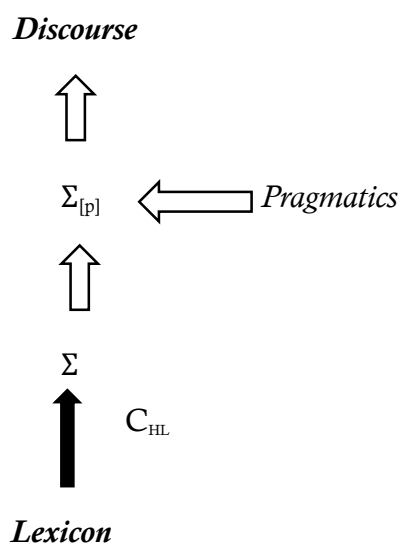
(7) [Reinhart’s \(2006\)](#) model of grammar



(Reinhart 2006, p.3, Figure 1)

Drawing on data from Catalan, [López \(2009\)](#) endorses a derivational approach to IS, as depicted in (8), and argues that information structural movement is not triggered by IS features, such as topic and focus, but is activated by feature valuation/checking of pragmatic rules. As portrayed in (8), a module *Pragmatics* assigns features, [+a(naphoric)] assigned to [Spec, ν P] and [+c(contrast)] to [Spec, FiniteP], to constituents in certain positions, and the IS of a syntactic object Σ becomes $\Sigma_{[p]}$, which will be mapped onto a discourse structure. The postulation of *Pragmatics* is due to be reference to the speaker’s intentions or the speaker’s assumption regarding ‘what the hearer knows’, ‘what the speaker wants the hearer to pay attention to’, etc. With this understanding, IS involves a type of computation that is able to map a syntactic structure onto the speaker’s intention of using language.

(8) López's (2009) module of grammar



(López 2009, p.23, Figure 2.1)

The preceding discussion on the four modules of grammar underscores a milestone that in addition to a need to seek a more elaborate architecture of grammar, IS notions such as topic and focus can be internal or external to the syntactic computation, though there are several empirical and theoretical kinks to be worked out in these models. Hence, in response to the preoccupations stated at the outset, it follows that (i.) syntax (in a narrow sense) fails to be the only component of grammar that accounts for all discourse-related phenomenon, and (ii.) the role of syntax has to be minimalized to a certain extent that the division of labor between syntax and other components must be cut across. The point of departure is to scrutinize how syntax interfaces with other external components, say discourse, which is presumably syntacticized in the left periphery of a CP (Rizzi 1997; Cinque 1999; Tsai 2015a, 2015b), and in the middle field of a TP (Belletti 2004; Shyu 1995, 2001; Paul 2002, 2005; Kuo 2009; Hsu 2008, 2012, a.o.).

2. Topic and focus: Two views

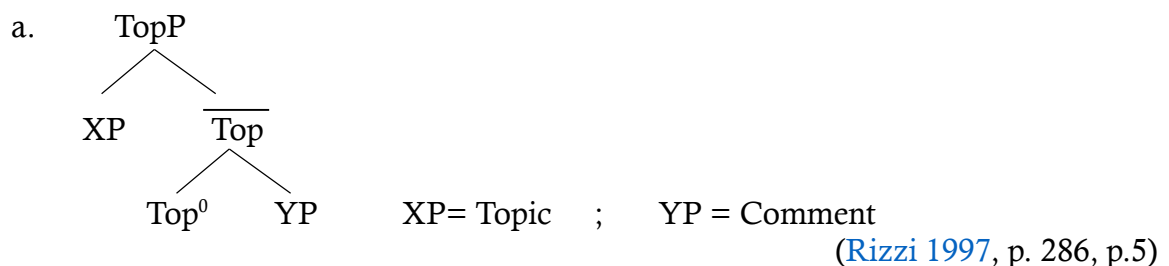
Constituents in the left-peripheral edge are assumed to bear information structural functions, such as topic and focus. Topics and focus, however, are more than observational terms.² As scientific notions, they remain a vast topic of research pursued within the

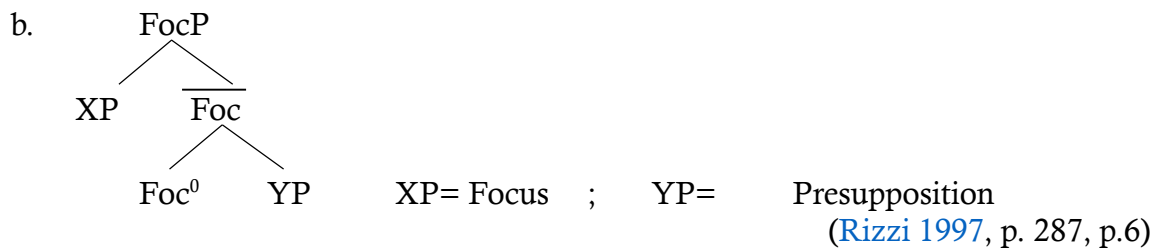
² I will define 'focus' and 'topic' in Section 4.1 of this chapter, which serves the baseline of discussion in this dissertation.

generative framework. Two broad lines of theorizing about topic and focus in syntactic theories can be characterized as whether topic and focus should be deemed as formal features in syntax (Cinque 1999 for the cartographic approach; Molnár & Winkler 2009 for the *Edge and Gap Hypothesis*) or discourse features only active at the interface of syntax with the external systems in the sense of Chomsky (1995) (Reinhart 2006; Neeleman & Van de Koot 2008 for the *Mapping Rule Approach*; Horvath 2010 for the *Strong Modularity Hypothesis*).

Under the syntactic-centric view, topic and focus are linguistic notions. The cartographic approach (Rizzi 1997; Cinque 1999), for example, assumes a transparent mapping between form and interpretation, and attempts to syntacticize as much as possible the interpretative domains, on the basis of evidence from word order and the order of spelt-out functional morphemes (Cinque & Rizzi 2010: 64). The cartographic approach argues that topic and focus are syntactically encoded by formal features in the C_{HL} and they have dedicated functional projections (TopP and FocuP) in the left periphery. It follows that topic and focus features play a role in driving the syntactic computation and participate in feature-checking/agreement phenomena and triggering syntactic movement. Thus, topic and focus are manifested via the syntactic articulations and have their own interpretative routines. Given that topic and focus are formal features under this approach, a constituent XP in (9)a and (9)b enters into a feature-matching relation with its corresponding X⁰ and moves to a Spec position of its functional projection to check off the formal feature via Spec-Heard Agreement. The moved XP is interpreted as a topic or a focus with its remainder YP as a comment or a presupposition. (9)a-b support the isomorphic view between constituent structure and IS. Viewed in Skopeteas and Verhoeven (2012), this approach can be summarized in (10).

(9)





(10) Discourse Configurational Hypothesis

The information structural properties of constituents in the left periphery result from the fact that particular structural configurations are associated with information structural concepts.

(Skopeteas and Verhoeven 2012, p. 297, ex. 2)

In sharp contrast with the above isomorphic view, an interface-based view claims that not encoded as designated formal features in the C_{HL} and lacking corresponding functional projections in the fine structure of the left periphery, topic and focus are exclusively involved in discourse grammar, or in the mapping of syntactic structures into information structural representations. Topic and focus interact indirectly with myriads of phenomena in the C_{HL} at the interface, the interface view advanced recently in Reinhart (2006) for the interface strategies, Zubizarreta (1998) for PF/prosodic movement, Neeleman and Van de Koot (2008) for the mapping rules, and Fanselow and Lenertová (2011) for accent-related locality constraints for movement. According to this view, the association between structural configurations and discourse-related notions are the epiphenomena arising from interface strategies related to the properties of the linearization or the prosodic structure. This interface view is summarized in the *Discourse Underspecification Hypothesis* (Skopeteas and Verhoeven 2012) in (11).

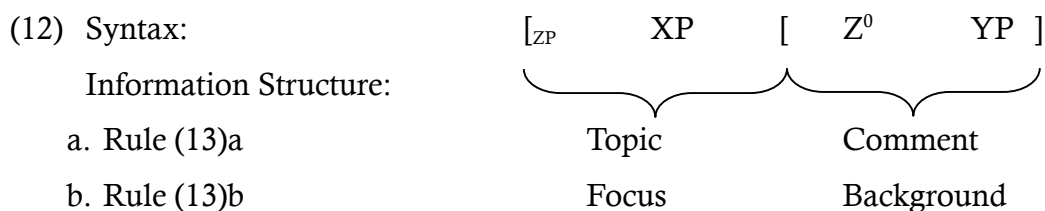
(11) Discourse Underspecification Hypothesis

The information structural properties of constituents in the left periphery result from interface strategies that relate to properties of the linearization and the prosodic structure.

(Skopeteas and Verhoeven 2012, p. 296, ex. 1)

This interface-based view is further concretized in Neeleman and Van De Koot's

(2008) mapping approach, which does not posit TopP and FocP in syntactic structure, and apparent topicalization and focalization are not driven by formal features [+Topic] and [+Focus] respectively. Rather, the notion of topic and focus arises when the output of a syntactic constituent, illustrated in (12), maps onto its IS via information mapping rules in (13). Under this view, the rules are related purely to linear partitions of the output of the syntactic constituent, and the hierarchical structure is disregarded. An immediate consequence, as one might conceive, is that there is no pre-fabricated extended functional projection projecting [+Topic], TopP, and [+Focus], FocP.



(13) a. Comment Mapping Rule

If XP in (12)a is interpreted as topic, then interpret YP as comment.

b. Background Mapping Rule

If XP in (12)b is interpreted as focus, then interpret YP as background.

Furthermore, the representations in (12) exhibit an asymmetry in the embedding possibilities; a focus-background articulation may be part of the comment, whereas a topic-comment articulation cannot be part of the background, as represented in (14).

(14) a. Topic [_{COMMENT} FOCUS [_{BACKGROUND} ...]]

b. *FOCUS [_{BACKGROUND} Topic [_{COMMENT} ...]]

Fanselow and Lenertová (2011) point to several drawbacks of the syntactic-centric view, treating topic and focus as movement-triggering features. First, treating topic and focus as formal features in the syntactic derivation violates the Inclusiveness Condition (Chomsky 1995), precluding any addition of features, unless they are already included in the numeration at the outset of the derivation. It is apparent that topic and focus are not lexical items. Second, three sentences in (15) share the identical numeration that leads to similar derivations, [*X* likes *Y* very much]; the NP *Sam* needs to check some formal feature

in C^0 or the Extended Projection Principle (EPP) feature not intrinsic to a lexical item. Nonetheless, it turns out to be the incontrovertible fact that sentences (15) acquire additional meanings with respect to the displaced NP constituent in actual discourse, and this discourse-induced reading cannot be ascribed to syntax alone. [Aboh \(2010\)](#) thus suggests that topic and focus are not part of syntax but must be added to the linguistic expression once computed by the C_{HL} . To wit, IS starts with the numeration.

- (15) a. **Sam**, I like him very much. [Left-dislocated *Sam*: topic reading]
 b. I like him very much, **Sam**. [Right-dislocated *Sam*: topic reading]
 c. **SAM**, I like very much. [Left-dislocated *SAM*: focus reading]

(Modified from [Aboh 2010](#), ex. 3a-b)³

In addition to the animated debate over the precise featural specification of [+Topic] and [+Focus] at narrow syntax or IS, a vantage point for further discussion is other two views on topic and focus, a Lexicalist view and a locality approach, though less discussed. [Aboh \(2010\)](#) advocates the view that the only interface relating to IS is the lexicon, and discourse determines the numeration of a linguistic expression, an immediate consequence being that topic, focus and interrogatives are all grammatical features in the lexicon, equivalent to Case/ φ -features.⁴ This view, thus, bridges the lexicon and narrow

³ In addition to the violation of the Inclusiveness Condition, there are still two downsides of the syntactic-centric view. First, left peripheral movement is usually analyzed on a par with *wh*-movement under specific theoretical background assumptions; however, they differ in conditions imposed on movement (pied-piping only allowed in *wh*-movement), obligatory movement (movement associated with topic and focus is mostly optional) and a covert-overt distinction (if overt movement of a XP is triggered by a [+Focus] feature, why is there no covert equivalent at LF?). Second, it is found that moved elements in the left peripheral position do not serve as a checking landing site of topic/focus features; thus, *wh*-movement lacks discourse-driven motivation. Motivating examples are given as follows.³

- (i) a. German adverb fronting
Wahrscheinlich hat ein kind einene HAsen gefengen
 probably has a child a.ACC rabbit caught
 'A child has probably caught a rabbit.'
 (qtd in [Fanselow and Lenertová 2011](#), ex. 7a)
- b. German subject fronting
Ein Kind hat einen HAsen gefangen
 a child has a.ACC rabbit caught
 'A child has probably caught a rabbit.'
 (qtd in [Fanselow and Lenertová 2011](#), ex. 8a)

The two examples are quoted from [Fanselow \(2002\)](#) and [Frey \(2005\)](#). [Fanselow and Lenertová \(2011\)](#) point out that any constituent in the TP can move to [Spec, CP] without recourse to any discourse marking or motivation.

⁴ Nevertheless, treating topic and focus as the grammatical features added to the numeration, though nicely

syntax, and permits the merge of TopP, FocP and ForceP in the sense of Rizzi (1997 and subsequent work). This view is further consolidated by the MP (Chomsky 1995), according to which the displacement of a category is morphology-driven, which indirectly suggests that the motivation for movement is crucially due to the features in the numeration that must be checked off in the course of the derivation. In Gungbe, as shown in (16), topic and focus are morphologically spelt out, and a topicalized NP and a focalized NP are accompanied respectively with a corresponding relevant particle, in clear parallelism with a tense marker in Gungbe occurring to the right of the subject. This parallelism lends support to Aboh’s view that tense, topic and focus features are present in the lexicon.⁵

- (16) a. Ún sé ɖɔ́ dán lɔ́ yá Kófí hú i
 1SG hear that snake DET TOP Kofi kill 3SG
 ‘I heard that, as for the snake, Kofi killed it.’

(Aboh 2010, ex.22a)

- b. Ún sé ɖɔ́ dán lɔ́ wɛ Kófí hú
 1SG hear that snake DET FOC Kofi kill
 ‘I heard that Kofi killed THE SNAKE.’

(Aboh 2010, ex.22b)

A locality approach, as proposed in Abels (2012), argues that the behaviors and positions of Rel, Int, Top, and Foc can be reduced to locality that is able to impose certain constraints on movement possible in the left periphery, an immediate consequence arising from which is that various functional projections layered in the left periphery should not be taken to be a theoretical primitive. Instead, the ordering can be predicted by the locality conditions. It is observed that the relative operator in Italian is allowed to undergo long-distance movement across the topic; the inverse does not hold. Two scenarios in (17) are the instantiations of the asymmetry, exemplified respectively in (18). Abels claims that the locality conditions are derived from an effect of Relativized Minimality.

circumventing the problem of the Inclusiveness Condition, still fails to explain the puzzle that in the latter stage of derivation, syntax still needs to know which element should be interpreted as topic or focus in syntactic structure, particularly projecting as TopP or FocP. Again, this gives rise to the look-ahead problem (Hsiao-hung Iris Wu, p.c.).

⁵ Nevertheless, as one is aware, this Lexicalist view still fails to cope with the problem of the Inclusiveness Condition; if a constituent in the numeration has to be targeted and assigned the topic or the focus feature for the subsequent derivation at narrow syntax, then corresponding extended functional projections, FocP and TopP, have to be merged in order to check off the topic/focus feature.

(17) a. [_{CP} Relative.Op...[_{CP} Topic...t_{RELATIVEOP}]]

↑ OK

b. *[_{CP} Topic... [CP Relative.Op...t_{TOPIC}...]]

↑ *OK

(18) RelativeOp > Top

a. un uomo a cui, il premio Nobel, lo daranno senz'altro
 a man to whom the Nobel Prize they will give it undoubtedly

(Rizzi 1997, p.289, ex. 12a)

b. *un uomo, il premio Nobel, a cui lo daranno senz'altro
 a man the Nobel Prize to whom they will give it undoubtedly

(Rizzi 1997:289, ex. 12b)

Assume that Abel's proposal is on the right track, [Neeleman and Vermeulen \(2012\)](#) add that Abel's proposal allows the elimination of various functional projections without sacrificing the empirical coverage. Furthermore, movement of Rel and Top does not target any pre-fabricated position but any position in the left periphery because the Relativized Minimality alone is able to filter out the unattested orders of Rel and Top. Also, a natural translation of Abel's proposal also suggests that there should be a hierarchy of semantic, and discourse-related features in the left periphery that are able to regulate movement (a feature-checking view that the featural matrix of Rel is richer than that of Top), since there is no pre-determined hierarchy of CP.

1.2 Summary

The above discussion has shown that making sense of the division of labor between syntax and discourse requires a better understanding of the nature of various syntactic and discourse-related notions, and also an explanatory module of grammar that is able to offer an elucidation of how syntactic structures are mapped onto IS representations at the interface. To address the question in detail requests a large space for discussion and goes beyond the scope of the current dissertation. For this reason, I will restrict my attention to

topic and focus, two discourse-related notions and the discourse notions, the discourse role of SPEAKER and HEARER/ADDRESSEE. I do not exhaustively investigate all discourse-related notions at the interface between syntax and discourse. Rather, this dissertation represents an attempt to understand how discourse-related notions are related to the syntax-discourse interface, and achieve the more modest goals of establishing the feasibility of a theory of the syntax-discourse interface.

In this dissertation, I take sides with the syntactic view that discourse notions are formal features active in the syntactic computation and are assigned to lexical items in the numeration (Aboh 2010). This activates the merge of a layer of corresponding functional projections to check these formal features in order for the derivation to converge. This is tantamount to saying that discourse features are responsible for driving the syntactic computation. Nevertheless, this is not the whole story. Rather, I will further show that there is another layer, a speech act layer (Speas and Tenny 2003) dominating ForceP, which is to encode the involvement of SPEAKER and HEARER/ADDRESSEE. Precisely speaking, the speech act layer serves an interface relating to the immediate context, which in turn involves SPEAKER and HEARER/ADDRESSEE. The licensing condition of these two discourse roles have to be externalized in some way to the numeration because it is acutely sensitive to the universality of discourse, which cannot be dictated by the computation system alone. In spite of the nature of externalization, the speech act layer, as part of the computation system, serves as a means of activating the interface between syntax (the computation system in a broad sense) and discourse.

In Section 3, I introduce two syntax-discourse phenomena of particular interest along our line of inquiry, *Aboutness Topic* (AT) and *Nonsententials* (NS), and explain why they are able to provide insight into the interface between syntax and discourse in Mandarin.

3. The issues

In this section, I briefly introduce two major phenomena in question, and point out their theoretical and empirical significance for the syntax-discourse interface.

3.1 Aboutness topic

It is argued that the discourse function of topic is to identify an entity or a set of

entities, according to which the asserted information in a comment constituent must be stored in the Common Ground (see [Krifka 2008](#) for an in-depth survey of topic and focus). A wide-ranging discussion about ‘topic’ in syntactic theory has been boiled down to three major questions:

- The base-generation and movement paradox: how each type of topic is derived;
- The distribution: whether each topic has a dedicated and fixed position in the periphery of CP or ν P;
- The interpretative routine: how its relation to the remainder of the clause is syntactically or semantically licensed at the interface.

The three questions can be interpreted another way: what drives the computation system to derive different types of topic within the same set of principle while interfacing with discourse. I think Aboutness Topic (AT) in Mandarin provides a good testing ground for examination of the questions. (19) offers a summary of three well-known topic constructions in Mandarin (See [Badan and Del Gobbo 2007, 2011](#)),⁶ with illustrative examples in (20).

(19)

| | Aboutness Topic 1 | Aboutness Topics 2 | Left Dislocation |
|------------------|--------------------------|---------------------------|-------------------------|
| Formation | Base-generation | Base-generation | Movement |
| Feature | Resumptive pronoun | No gap | Trace |

(20) Three types of topic in Mandarin

a. Aboutness topic 1


[zhe-ge ren]_iTOP, wo hen taoyan ta.
 this-CL person I very dislike him
 ‘This person, I dislike him a lot.’

⁶ A more refined classification of topics in Mandarin will be introduced in Chapter 3.

b. Aboutness topic 2

[Hua]_{TOP}, wo zui xihuan [meigui]_{FOC}.
 flowers I very like rose
 ‘As for flowers, I like roses a lot.’

c. Left dislocation

[Na-ben shu]_{TOP_i}, wo kan-le t_i.
 that-CL book I read-ASP

 ‘That book, I read before.’

In the standard analysis of left dislocation (20)c, the mechanic of movement of the object is described along the lines designed for *wh*-movement, i.e. \bar{A} -movement of the object establishes an agreement relation between an operator-like feature of the object and Comp. For sure, the features relevant to this \bar{A} -movement encode information structural notions such as focus or topic.⁷ What deserves attention is AT in (20)b, also known as called the gapless topic or hanging topic (Shi 2000; Ting and Huang 2006). First, there has been a consensus that AT is derived via base generation, because there is no robust evidence in support of movement (Huang et al. 2009; Cheung 2008; Xu 2006; Li 2000, among others), like reconstruction effects and island sensitivity violations; precisely, there is no apparent gap associated with the topic. Nevertheless, I will show that this view cannot be sustained anymore if we look at its variants and information structural makeup. From a crosslinguistic perspective, AT represents an incarnation of XP-split constructions commonly found in German (Ott 2011). How such XP-split constructions are derived remains the subject of controversy and is subject to different analyses (See van Hoof 2005 for a comprehensive survey). The core generalization is that as discussed in Fanselow and Cavár (2002), the XP-split construction is endowed with a particular pragmatic structure- The right part of XP must be focal, while the left-hand part is a link topic or a second focus. This co-occurrence is defined as pragmatic constraints or ordering in the sense that the XP-split construction is grammatical if a single XP must fulfill two different positional requirements. Take (20)b for example: AT is a topic NP and denotes a set of fruits, and

⁷ As discussed in Section 1, topicalization might be another form of *wh*-movement in disguise. Aboh (2010) initiates the discussion that focalization and topicalization are distinct from *wh*-movement with respect to empirical evidence and theoretical complications.

the F-marked NP *pingguo* ‘apples’ denotes another set of fruits that is included in the denotation of the AT. The question is how AT and the F-marked constituent split from each other if they form a constituent interpreted as a hypernym-hyponym relation (Pan and Hu 2008), a taxonomic relation (Dayal 2004) or a predicative relation (Jheng 2013, 2014). As visualized in (21), which is a simplified illustration of the XP-split construction, if XP and YP are merged as a complex ZP, though assigned two independent formal features, and ZP is copied and internally merged to position A, it is not clear why in the output (21)b, YP disappears in position A, and XP in position B. It seems that the derivation of (20)b has to resort to particular syntactic operations permitted by the computation system.

(21) The hypothetical derivation of (20)b

- a. [^A_{ZP} XP^{TOP} YP^{FOC}].....^B[_{ZP} XP^{TOP} YP^{FOC}]]
- b. [^A_{ZP} XP^{TOP} ?].....^B[_{ZP} ? YP^{FOC}]]

Second, though AT's designated position is arguably in the topmost position of the CP periphery (Cheung 2008; Badan and Del Gobbo 2007, 2011), it will be shown in Chapter 2 that AT does not have a fixed position when followed by a focused constituent to form the XP-split construction. What licenses the grammaticality of AT sentences is that AT has to be followed by a F-constituent, as shown in (20)b.

Third, it is not clear how ‘aboutness’ licensed, syntactically, semantically or in some components of grammar. There are considerable differences in defining the notion of aboutness, and the actual operationalization of it at the interface is still open to discussion. Chafe (1976) indicates that AT serves as a frame that specifies a domain of reality and restricts what type of information can be given, as exemplified in (22). The aboutness topic *as for his health* sets up a frame under which all types of information, the health condition of the subject *he* for example, must be relevant to the topic.

(22) [As for his health], he had gallbladder removal surgery recently, but he is recovering quickly.

A more refined view on AT, behaving like a file-card system⁸, is put forward in

⁸ Following her proposal, sentence topics are relevant to the organization of the context set, which consists

Reinhart (1982), which adopts Stalnaker’s (1978) notion of ‘context set’ (a set of propositions that an interlocutor accepts to be true, termed as a Common Ground (CG)). Reinhart assumes that the CG is structured in a way that information is stored in the form of pairs of entities and a proposition (or a set of proposition) about that entity. New information is added to the GC in terms of structured propositions, whereas the Sentence Topic (that is, AT) designates an entity and the remainder of the sentence contributes the information to be related to the entity. Crucially, it says that one proposition is not added to one another, and, rather, propositional information centers around individuals/entities. Viewed in Reinhart’s proposal, an aboutness topic, the knowledge about an entity α , is accessed when one sentence is uttered by one speaker and is verified by another speaker (the hearer).

Reinhart’s view on AT provides a starting point for advances in understanding the discourse-sensitive properties of AT at the interface between syntax and discourse. Nonetheless, a more pressing question for us to ask is how the interpretative import can be syntactically substantiated. I will address this question by looking at three types of AT construction in Mandarin, and show that they can be analyzed on a par with Split Topicalization (ST) (See Jheng 2013, 2014).⁹ As will be shown in Chapter 2 and 3, I argue that the term *aboutness* topic per se is merely a descriptive term lacking theoretical coherence, and the notion of aboutness results from the interpretative routes under the cartographic approach.

It is observed in Mandarin that there are three types of AT, (i.) NP AT (Type I), (ii.) VP AT (Type II), and (iii.) VP AT (Type III)¹⁰, as illustrated in (23). In (23)a, AT is a NP, and there is a semantic relation between AT and the NP object in the host clause, which can be characterized as a set-member relation (Pan and Hu 2008), a hypernym-hyponym relation or a predicative relation (Jheng 2013, 2014). In (23)b, AT is a bare VP and it also

of propositions admitted into the context set and classified into subset of propositions, which are stored under defining entries. This line of reasoning suggests that NP sentence topics are referential entities according to which propositions in the context are classified.

⁹ In the previous scholarship, (20)b is considered to be an instance of aboutness topic construction. Nevertheless, as the full discussion is to be offered in Chapter 2, a counterpart of (20)b is common in German, as illustrated in (i.). For the sake of clarity and precision in characterizing aboutness topic, I follow the existing analyses (Fanselow 1987; Fanselow and Cavar 2002; van Hoof 1997a, 1997b; Ott 2011, 2015, a.o.).

(i.) [Raubvögel]_{CORE} glaube ich kennt Gereon nur [Bussarde]_{REM}
 birds of prey believe 1.SG know Gereon only buzzards
 ‘As for birds of prey, Gereon knows only Buzzards.’

¹⁰ As will become apparent, ‘split’ in question suggests that movement be involved.

contains a AT NP related to the NP object in the host clause. One distinct feature of VP AT (Type II) is that the verb (i.e. *chi* ‘eat’) in VP AT has to be identical to the verb (i.e. *chi* ‘eat’) in the host clause, manifesting lexical identity effects (Cheng and Vincent 2003). In sharp contrast, in (23)c, AT is also a bare VP but it differs from VP AT (Type II) in that the verb (i.e. *qu* ‘go’) in VP AT can be different from the verb *xuan-da* ‘choose to take’ and does not observe lexical identity effects.

(23) Three types of AT in Mandarin

a. NP AT (Type I)

[_{NP} Shuiguo]^{AT}, Zhangsan zui ai chi pingguo.
fruit Zhangsan most like eat apple

‘As for fruits, Zhangsan likes to eat apples very much.’

b. VP AT (Type II)

[_{VP} Chi shuiguo]^{AT}, Zhangsan zui ai chi/*mai pingguo.
eat fruit Zhangsan most like eat/buy apple

‘As for eating fruits, Zhangsan likes to eat apples very much.’

c. VP AT (Type III)

[_{VP} Zuo yundong]^{AT}, Zhangsan hui xuan da paiqiu.
do exercise Zhangsan will choose play volleyball

‘As for doing exercise, Zhangsan will choose to play volleyball.’

Careful scrutiny of the information structure of AT’s points out that AT is accompanied by a F-constituent in the host clause, as visualized in (24), its information structure says that AT denotes a set of entities/events and the entity/event denoted by the F-constituent has be included in the set. The question is how such information structure, TopP-FocP, is derived at the syntax-discourse interface, and what drives this derivation.

(24) Three types of AT

a. NP AT (Type I)

[NP₁]_{AT}... [NP₂]_{FOC}

b. VP AT (Type II)

[_{VP} Verb-NP₁]_{AT}... [_{VP} Verb-NP₂]_{FOC}

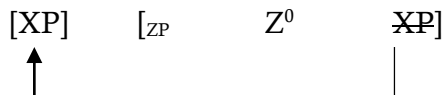
c. VP AT (Type III)

[VP₁]_{AT}... [VP₂]_{FOC}

What concern us is how AT is derived, given three tempting scenarios in (25), along with the presence of the F-marked constituent. Also, it will be shown that the distribution of AT is wider than that reported in the previous scholarship.

(25) Three possible analyses of AT in Mandarin

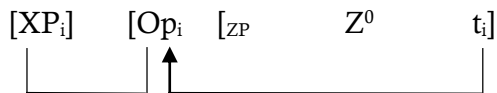
a. \bar{A} -movement



b. Base-generation



c. Operator movement



Predication

The first issue is to show that the information structure of AT is tied to the syntactic operations permitted by the computation system and the fine structure of CP/ ν P. Additionally, it will be argued that topic and focus, as formal features, are active in the syntactic computation. This necessitates the merge of TopP and FocP along the clausal spine in order to establish a proper feature-checking process.

Nevertheless, two caveats have to be issued here with the aim of distinguishing the three types of AT discussed in this dissertation from other AT-related constructions. First, one conspicuous AT discussed in previous studies (Li and Thompson 1981; Tsao 1990; Huang 1994, etc.), as illustrated in (26), has to be distinguished from the three types of AT investigated here. As shown in (27), the three types of AT discussed are limited to a AT displaying connectedness to some constituent in the host clause.¹¹ The NP AT *shuiguo* ‘fruits’ in (27)a is a hypernym of the constituent *pingguo* ‘apples’, a relation termed as a *Taxonomic relation* (Dayal 2004). This line of thinking also applies to (27)b. The VP AT (Type III) in (27)c is interpreted as a hypernym of *doing exercise*, and it is connected to the

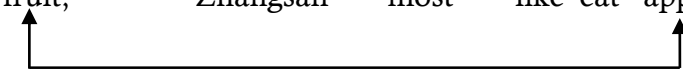
¹¹ The precise relation between AT and its associated constituent in the host clause will be discussed in detail in Section 3 of Chapter 3. For expository reasons, here I use the semantic relation *Taxonomic Relation* for illustrative purposes.

constituent *playing volleyball*, which is one of the hyponyms of *doing exercise*, (suppose that other hyponyms are *playing basketball*, *swimming*, *golfing*, etc.) It is apparent that this connectedness is absent in (26).¹²

(26) Na-chang da-huo (a), xingkui xiaofangdui lai-de-kuai.
 that-CL big-fire TOP luckily fire brigade come-DE-fast
 ‘As for that big fire, luckily, the fire brigade came quickly.’


(27) **Three types of AT**

a. NP AT (Type I)

[_{NP} **Shuiguo**]_{AT}, Zhangsan zui ai chi [**pingguo**].
 fruit, Zhangsan most like eat apple

Taxonomic relation


‘As for fruits, Zhangsan likes to eat apples very much.’

b. VP AT (Type II)

[_{VP} **Chi [shuiguo]**]_{AT}, Zhangsan zui ai chi [**pingguo**].
 eat fruit Zhangsan most like eat apple

Taxonomic relation

‘As for eating fruits, Zhangsan likes to eat apples very much.’

c. VP AT (Type III)

[_{VP} **Zuo yundong**]_{AT}, Zhangsan hui xuan [**da paiqiu**].
 do exercise Zhangsan will choose play volleyball

Taxonomic relation

‘As for doing exercise, Zhangsan will choose to play volleyball.’

Second, if connectedness plays a crucial role in distinguishing the types of AT in (27) from the type in (26), it is tempting to consider another analogous construction, as illustrated in (28), where the possessor undergoes extraction out of a complex DP in the host clause. In (28)a, assume that the possessor *Zhangsan* raises out of the complex DP, and the

¹² For further discussion on the analysis of (26), the interested reader is referred to Shi (2000).

resulting sentence is ungrammatical, as this raising operation violates the Left Branching Condition (Ross 1967). This violation can be rescued by inserting a pronoun, as evident in (28)b.¹³ What concerns the current discussion is that the possessor *Zhangsan* in the leftmost position is associated with the DP in the host clause, displaying connectedness, can it be analyzed on a par with the three types of AT in (27)? I argue that there exist some differences between the possessor raising construction and the three types of AT under discussion. As evident in (27), the taxonomic relation connects AT to a constituent in the host clause, and the relation can be paraphrased as in (29). This paraphrase relation is impossible in (28)b.¹⁴

(28) Possessor raising constructions in Mandarin

- a. *Zhangsan_i, wo xihuan [DP t_i baba].
 Zhangsan I like father
-

¹³ Kuo (2009) indicates that the ill-formedness of possessor raising in (i.)a can be rescued by replacing the trace with an resumptive pronoun in (i.)b. She proposes that the ill-formedness of (i.)a is due to the violation of the PF-Chain Visibility Condition (ii.), according to which the spell-out of the possessor trace within the phase is mandatory, and the insertion of a resumptive pronoun is motivated as a last resort strategy, as visualized in (i.)b.

- (i.) a. *[TP Gerusen_i [TP wo [vP t_i [VP xihuan [NP t_i baba]]]]].
 Grissom I like father
 b. [TP Gerusen_i [TP wo [vP t_i [VP xihuan [NP t_i=ta baba]]]]].
 Grissom I like he father
 ‘As for Grissom, I like his father.’

- (ii.) PF-Chain Visibility Condition (CVC):
 At PF, a possessor raising chain has to be visible in each spell-out domain.
 (Kuo 2009, p.114, ex.54)

¹⁴ It is interesting to add that even if the pronoun-insertion as a last-resort strategy is available for (28)a, it fails to account for an analogous construction in (i.) that can be also derived via possessor raising but is still grammatical. The pronoun-insertion strategy seems optional, as evident in (ii). A better way of interpreting the contrast between (28) and (i.)a-b is ascribed to the difference between the kinship relation in the former and the body-part relation in the latter. Otherwise, it is not clear why possessor raising works for (i.). Besides, (i.)a-b cannot be paraphrased as in (ii.), which again distinguishes (i.)a-b from the taxonomic relation in the types of AT discussed in this dissertation..

- (i.) a. Daxiang_i, wo xihuan [t_i bizi]
 elephant I like nose
 ‘(As for) the elephant, I like its nose.’
 b. Daxiang_i, wo xihuan [t_i=ta_i bizi]
 elephant I like it nose
 (ii.) *Bizi shi daxiang.
 nose is elephant
 ‘Noses are elephants.’
 (Chyan-an Arthur Wang, p.c.)

Intended ⇒ ‘Zhangsan, I like his father.’

- b. Zhangsan, wo xihuan [DP ta baba]
Zhangsan I like his father
‘Zhangsan, I like his father.’

(29) Paraphrases of the taxonomic relation.

- a. Pingguo shi shuiguo (de yi-zong). (= (27)a-b)
apple COP fruit DE one-CL
‘Apples are one kind of fruits.’
- b. Da paiqiu shi zuo yundong de yi-zhong (= (27)c)
play volleyball COP do exercise DE one-CL
‘Playing volleyball is one of the ways of doing exercise.’

Summarizing, for the caveats spelt out above, I exclude two analogous constructions of AT, as shown in (26) and (28), because the type of connectedness they display is markedly different from the taxonomic relation in the three types of AT discussed in (27).

3.2 Nonsententials

The first issue is aimed at showing that the syntax-discourse interface can be activated by encoding a lexical item with the [Topic]-feature and the [Focus]-feature in the numeration, and these two features have to be checked in their corresponding functional projections in the periphery of ν P/CP, as will become apparent in Chapter 2 and 3. Nevertheless, this view might not be fully correct in a sense that certain discourse notions, SPEAKER and HEARER/ADDRESSEE, are obviously externalized to the computation system and cannot be treated as formal features. Then, when this occurs, how does the computation system resolve the externalization of these discourse notions in order for the derivation to converge? I think nonsententials (NSs) offer a satisfactory answer.

The second issue is intended to discuss the syntactic structure of NSs in Mandarin with respect to a set of the left-peripheral effects they induce, and the licensing condition imposed on them at the syntax-discourse interface. It is argued that syntax plays a role in importing a layer of core syntactic structures into the computation of NSs, particularly

sa*P/SAP and ForceP, to substantiate discourse functions and semantic interpretations of NSs.

As indicated by [De Cat \(2013\)](#), a French NS (30) must be interpreted as performing the speech act, *exclamative*; otherwise, its felicity is not satisfied in the context. [De Cat \(2006\)](#) further claims that NSs are devoid of a layer of CP-domain functional projections that are argued to encode force, clause type, and other pragmatic/discourse notions, and there is no robust evidence in favor of a cartographic analysis of (30) by claiming that it has an articulated structure of the left periphery of CP.

(30) French NS

Toi, dans ta chambre!

you in your bedroom

[⇒ Go to your bed room]'

([De Cat 2013](#), p. 130, ex.20)

Nonetheless, in this dissertation, I argue that Mandarin NSs present a good testing ground for examining De Cat's doubt about the cartographic approach to NSs, and are able to lend weight to the view that the syntactic structure of NSs is more complex than one is able to conceive. First, though lacking a full clausal structure, a Mandarin NP NS in (31) is understood as having a full proposition at the interpretative level: the speaker intends to cut in line by uttering (31). Second, the NS has a clause type and can be endowed with an illocutionary force, directing the hearer to make way for the speaker so that s/he can cut in line. Third, this NS is accompanied by two particles; the discourse particle *eh*², though optional, is to draw the hearer's attention and signal the initiation of an utterance ([Hsu 2016](#)), and the sentence-final particle (henceforth abbreviated as SFP) *ah* is to convey the speaker's impatience ([Paul 2014](#)). Fourth, it is observed that the NS-final position is occupied by the second person singular *ni*, resembling a vocative. However, the presence of *ni* is closely related to the mandatory presence of the utterance-final particle: if the SFP *ah* is absent, the second person singular cannot occur. (31)b shows the NS can be surrounded by a cluster of C-level 'satellites', including discourse particles, SFPs and the second personal pronoun in a fixed order.

(31) Context: A bully intends to cut in line while yelling at another person behind him.

- a. Eh², [_{NP} wo xian] *(ah), (ni)!
- D.PART I first SFP you
- ‘Eh, me first, you!’ [Clause type: Declarative; Speech act: Directive]
- b. Discourse particle-[Utterance]_{NS}-SFP, -you

In the cartographic approach to the left periphery (Rizzi 1997; Cinque 1999), the above empirical observations indicate that the NS may consist of several functional projections in the left periphery of CP; ForceP for clause typing (Cheng 1997) and SFPs (Paul 2014), SaP for the vocative and discourse particles (Moro 2003; Hill 2007; Haegeman and Hill 2013; Haegeman 2014).

The general questions surrounding the syntax-discourse of NSs are:

- The base-generation and movement paradox: how are NSs derived at narrow syntax;
- The internal makeup of NS: do NSs have a fully-fledged clausal structure ranging from ν P to CP?
- The interpretative routine: How do NSs encode discourse notions, such as context-sensitivity and the SPEAKER-HEARER/ADDRESSEE relation?

The importance of the first question and the second one is that if a NS represents a reduced structure, what syntactic operations (such as PF deletion) are carried out to elide most parts of it, in line with Merchant’s movement-cum-deletion analysis (2001, 2004, 2006, subsequent work). Interpreted another way, this line of reasoning already suggests that it has a fully-fledged clausal structure. Can this be held true? In addition, the third question is that if discourse particles and the SPEAKER-HEARER/ADDRESSEE relation are not postulated as formal features, treated on a par with topic and focus, how are they accessible to the syntactic computation at the syntax-discourse interface?

The second issue in this dissertation is to answer the above questions. As will become apparent in Chapter 4 and 5, it will be shown that certain discourse properties such as the discourse role of SPEAKER and HEARER/ADDRESSEE, particularly incarnated by discourse particles and the vocative, are not strong formal features because their presence is closely related to the immediate context. Rather, I argue that these discourse properties are substantiated by a speech act layer (Speas and Tenny 2003; Hill 2007) dominating ForceP,

though they are not directly dictated by the computation system.

4. The proposal

In Section 4.1, I will spell out the theoretical assumptions that will frame the analyses provided throughout the following chapters. The assumptions will be slightly modified and elaborated in each chapter that follows, whenever necessary, to serve ingenious theoretical workarounds and capture problematic empirical facts. Then, the proposed analysis of AT and NSs sketched in this dissertation is presented in Section 4.2 and Section 4.3.

4.1 The framework and assumptions

4.1.1 The cartographic view

I adopt the framework of generative grammar, specifically the Minimalist Program in (Chomsky 1995) and subsequent works (Chomsky 2000, 2001). What's more, I follow Rizzi's (1997) split-CP hypothesis that the CP layer serves as an interface between the propositional content denoted by TP and the superordinate structure associated with discourse. I take at face value that the CP layer consists of four basic functional projections, each of which encodes a feature, [+Force], [+Topic], [+Focus], and [+Finite], as hierarchically layered as in (32).

(32) ...Force...(Topic)...(Focus)...FinP... TP

Besides, I adopt a cartographic approach (Cinque 1999) in the sense that there is a transparent mapping between form and interpretation, and attempts to syntacticize as much as possible the interpretative domains, on the basis of evidence from word order and the order of spelt-out functional morphemes (Cinque & Rizzi 2010: 64).

4.1.2 The notion of topic, focus and contrast

In this section, I present the basic syntactic and semantic assumptions of topic, focus and contrast noted in some corners of the literature, serving the basis of discussion in the

following chapters.

Information structure (IS), following [Chafe's \(1976\)](#) discussion, is understood as the package of information that is intended to meet the immediate communicative needs of the interlocutors. This information packing or structuring can be embodied by a set of strategies that the interlocutors adopt to optimize the form of a message, according to the speaker's belief about the hearer's knowledge and attentional state. For example, the interlocutor can dislocate an object to a sentence-initial position to highlight the known topic between the interlocutors, as in (33), or prosodically mark a constituent with a stress, as in (34). It should be noted that these information structural strategies do not affect the truth condition of sentences; for example, either the indirect object in (34)b or the direct object is focused with stress in (34)a, and the truth condition of these two remains unaffected.

(33) (Ada and Chris are discussing which kind of fruit is disgusting.)

Ada: [Bananas]_i, I hate t_i.

(34) a. I gave **CHRIS** a book, (Not Ada).

b. I gave Chris **A BOOK**, (Not a pen.)

[Kučerová & Neeleman \(2012\)](#) state that there is a wide range of grammatical effects that can be treated as the reflex of IS, including order word (say from SVO to SOV) and a variety of types of prosodic and morphological markings of an information-structural notion (e.g. focus or topic) or its complement (e.g. background in the case of focus or comment in the case of topic). In addition, it is observed that fronting is a common operation to license a contrastive interpretation imposed on a fronted topic or a fronted focus. To provide a precise definition of topic and focus, however, remains a challenging task for syntactic theory, as these two notions have been defined with narrow confines in order to benefit one's analysis of relevant information structural phenomena. This suggests that the notion of topic and focus request refinements and subdivisions, if possible. Rather, in this dissertation, I suggest that focus and topic could not be the only two autonomous notions of IS. I adopt [Neeleman and Vermeulen's \(2012\)](#) three-way topology, as illustrated in (35). This typology says that topic and focus are basic notions in IS that can be enriched by contrast to yield other informational effects; for example, a contrastive topic is an

aboutness topic that is interpreted contrastively while a contrastive focus is a focus that is interpreted contrastively. The three notions have syntactic consequences. A word of reminder is that it is not my attempt at an exhaustive mention of focus and topic in the previous scholarship; instead, I will highlight their information structural basics with respect to contrast, an autonomous notion that is little noticed or largely ignored, and this view requests that contrastive focus is not a sub-type of focus, for example.

(35)

| | Topic | Focus |
|-----------------|---------------------------------------|--|
| | aboutness topic [topic] | new information focus [focus] |
| Contrast | contrastive topic topic, contrast] | contrastive focus [focus, contrast] |

In the following sub-sections, I will briefly discuss the interpretation of topic, focus and contrast, and how they interact with movement operations.

4.1.2.1 Focus and contrast

Focus, in a simple sense, is used to mark a constituent with new information or non-presupposed information. (36) represents a definition of focus under Alternative Semantic approach (Rooth 1992).

(36) Definition of focus

Focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions.

Heavily simplified, (36) says that a focused constituent invokes a set of alternatives, and one of them will be picked in contradiction to the rest for the interpretation of the focused constituent. For example, the focus of a proposition P is often taken to be that of P that corresponds to a *wh*-expression in Q, as exemplified in (37) and (38). The focus in (37) is *apples*, whereas the focus in (38) is *Ada*.

(37) A: What did Ada buy?
B: She bought [APPLES]_F.

(38) A: Who bought apples?
B: [ADA]_F bought apples.

(39) and (40) further show that (37) and (38) contain an ordinary value and a focus value respectively; the focus value is in contradiction to its ordinary value expressed by the proposition of the sentence.

(39) *Ordinary value:* [Ada bought apples.]
Focus value: {[Ada bought apples], [Ada bought grapes], [Ada bought strawberries], [Ada bought bananas],...}

(40) *Ordinary value:* [Ada bought apples]
Focus value: {[Ada bought apples], [Chris bought apples], [Roger bought apples], [Arthur bought apples],...}

Adopting Rooth's (1985, 1992) Alternative Semantics approach, Neeleman and Vermeulen (2012) point out that the information in (37) and (38) is a triplet consisting of a function (the background or the old information), the focus and a set of alternatives to the focus. (41) illustrates that the ordinary value is generated by applying the function to the focus, and focus value is generated by applying it to members of the set.

(41) a. Ordinary value:
< λx [John bought x], apples, [grapes, strawberries, bananas, ...]>
b. Focus value:
< λx [x bought apples], Ada, {Chris, Roger, Arthur, ...}>

As illustrated in (42), regular focus can be enriched by another autonomous notion, *contrast*, to yield contrastive focus. It is worth noting that regular focus and contrastive focus are different in two regards, for example. First, correction contexts in (42) allow movement of the focused constituent, if the contrast is made explicit in the answer. This

is disallowed in the case of regular focus in (43).

(42) A: Ada read The Government and Binding Theory.

B: (No, you're wrong). [The Minimalist Program]_{C+F} she read. [The Government and Binding Theory]_{C+F} she bought.

(43) A: What did Ada read?

B: # [The Government and Binding Theory]_{C+F} she read.

Second, the negative statement about an alternative is part of semantics of the contrast, as evident in (44) and (45). (44) shows that (44)(i.) is a felicitous continuation because *Dad's* reply contains a contrastive focus that asserts that there is at least one other relevant book that John did not read. In stark contrast, either (45)(i.) or (45)(ii.) can be a continuation of *Dad's* reply because there is no contrastive focus in the reply.

(44) (Mom and Dad know that John must read five books to prepare for the exam; they are discussing which books he has read so far.)

Mum: John's read the Selfish Gene.

Dad: Yes. I know. [The Self Gene]_{C+F} he's read.

(i.) *But* [The Extended Phenotype]_{C+F} he hasn't read.

(ii.) #In fact, he's read all five books on the reading list.

(Neeleman and Vermeulen 2012, p.12, ex.25)

(45) (Mum and Dad know that John must read five books to prepare for the exam; they are discussing which books he has read so far.)

Mum: John's read the Selfish Gene.

Dad: Yes. I know. He's read [The Self Gene]_F.

(i.) *But* [The Extended Phenotype]_{C+F} he hasn't read.

(ii.) In fact, he's read all five books on the reading list.

(Neeleman and Vermeulen 2012, p.12, ex.26)

(44) and (45) are taken to show that contrast is another autonomous discourse notion, challenging the view that focus is divided into two types, *focus* and *contrastive focus*. (46) is

the semantics of the contrastive focus of (44)(i.), illustrating that contrastive focus differs from regular focus in that it also encodes a negative statement in (46)b. In addition, contrast behaves like a quantifier that it is able to mark scope by undergoing \bar{A} -movement to a scope-taking position.

(46) The semantic calculation of (44)(i.)

- a. $\langle \lambda x [\text{John read } x], \text{The Selfish Gene}, \{\text{The Blind Watchmaker, the Ancestor's Tale, The Extended Phenotype...}\} \rangle$
- b. $\langle \exists y [y \in \{\text{The Blind Watchmaker, The Ancestor's Tale, The Extended Phenotype...}\} \ \& \ \neg [\text{John read } y]] \rangle$

4.1.2.2 Topic and contrast

Topic, under [Reinhart's \(1982\)](#) analysis, is characterized as 'aboutness'; viewed with respect to IS, topic is a linguistic expression under which the information expressed in the comment is about. (47) is the definition of topic, in line with Reinhart's proposal.

(47) Definition of topic:

The topic constituent identifies the entity or set of entities under which the information expressed in the comment constituent should be stored in the common ground content.

One intrinsic property of a topic expression is that it can be introduced by 'about', 'regarding', 'concerning', 'speaking on' and so on to the discourse, which are taken to be evidence for the existence of aboutness. Besides, two types of topic must be differentiated at first, a discourse topic and a sentence topic. See (48). *Maxine* is a sentence topic in the first small sentence, but her experiences are relevant to the overarching discourse topic. Put differently, *Maxine* is a sub-topic of the larger discourse topic. Though English does not demonstrate apparent grammatical effects used to differentiate the two types, [Vallduví \(1992\)](#) has shown that in Catalan, a sentence topic undergoes left dislocation while a discourse topic undergoes right-dislocation together with other background information.¹⁵

¹⁵ It is worth noting that there is a clear-cut distinction between sentence topic and discourse topic. The former what is predicated about an entity in a sentence, whereas the latter is what a part of the discourse is

(48) Well, **Maxine** was invited to a party by Claire on her first trip to New York. She was amazed by the strange crowd with their bell-bottom trousers and star-studded jacket.

(Neeleman and Vermeulen 2012, p.14, ex.31)

Now, the question is how topic is different from focus. Neeleman and Vermeulen claim that in the case of topic, topic generates utterances by the function of the lambda operator, on a par with the case of focus in which focus generates a set of propositions. For example, example (48) has a semantic computation in (49), in which applying the function to the topic generates an assertion whose propositional content is the ordinary value, and applying the function to the topic generates a set of utterances that can be called the topic value.

(49) $\langle \lambda x \text{ ASSERT}[x \text{ was invited by Claire to a party in New York}], \text{Maxine}, [\text{Susan}, \text{Bill}, \dots] \rangle$

Similarly, topic can be added with contrast, giving rise to a contrastive topic, as exemplified in (50): in (50), *Chris* is interpreted contrastively.

- (50) A. Tell me about Joy. Will she be able to finish writing her MA thesis by this month?
B. Well, I don't know about Joy, but [Chris]_{TOP+C} will finish his MA thesis by this month.

Moreover, as discussed previously, contrast is quantificational and is able to license \bar{A} -movement. As evident in (51), the fronted NP *the female popstars* receives a contrastive interpretation because it denotes a sub-set of the topic introduced in the context question in (51)A (*the popstars*) and stands in an opposition to the complement set (*male popstars*).

about, as evident in (i.) and (ii.).

- (i.) Jennifer is a careful researcher and knowledgeable syntactician, and her originality leaves something to be expected.
a. **Sentence topic:** Jennifer
b. **Discourse topic:** Jennifer's scholarly abilities.

See [van Dijk \(1977\)](#) for in-depth discussion.

By contrast, the fronted topic is allowed if the context question in (51)B does not request a similar interpretation, such as *what do you mean*.

- (51) A: What about the popstars? Who showed them around?
 B: Well, [the female popstars]_{TOC+C}, Bill gave a tour.
- (52) A: Tell me about the female popstars?
 B: #Well, [the female popstars]_{TOC+C}, Bill gave a tour.

Similar to the contrastive focus, the contrastive topic also contains a negative statement; however, the negative statement is different from that in contrastive focus. In the case of contrastive focus, one of the alternative propositions it evokes is denied, while in the case of contrastive topic, one of the alternative utterances it evokes is the one that the speaker is unwilling to or unable to make. See (53). The *how about* question marks *Chris* a contrastive topic (in opposition to *Ada*). (53)i. is not a felicitous response because it suggests an alternative to Chris (the only alternative to *Chris* is *Ada*, and B has met him), while (53)ii. is a felicitous response because Speaker B fails to assert that he didn't meet Chris, consistent with the context.

- (53) Ada and Chris (and other people) came to New York.
 A: Then, you met Ada. How about Chris?
 B: (i.) # Chris, I met.
 (ii.) [Chris]_{TOP+C}, I didn't meet.

(54) illustrates the semantic computation of the contrastive topic.

- (54) The semantic calculation of (53)(B)(ii.)
- a. $\langle \lambda x \text{ ASSERT } [x \text{ was invited by Claire to a party in New York}], \text{Maxine, [Susan, Bill, ...]} \rangle$
 - b. $\langle \exists y [y \in \{ \text{Susan, Bill, ...} \} \ \& \ \lambda x \neg \text{ASSERT} [x \text{ was invited by Claire to a party in New York}](y)] \rangle$.

4.1.2.3 Syntactic representations of topic, focus and contrast

The above discussion has argued for a distinction between topic and focus with respect to contrast. A vantage point for discussion is to investigate the syntactic representations of topic and focus. First, topic is interpreted externally to focus; this is due to the distinction that topic is an utterance-level notion, whereas focus a notion related to propositions. This follows from the basic information packing structure that propositions are included inside utterances. (55)a instantiates the information packing structure, while (55)b is ill-formed because focus has to be included in the domain of topic.

- (55) a. [UTTERANCE Topic [PROPOSITION Focus...]]
 b. # [PROPOSITION \bar{A} -focus [UTTERANCE Topic...]]

What's more, if \bar{A} -movement of a given constituent takes place, no domain of contrast is marked. This implies that no instructions are given regarding the mapping between syntax and information structure. In this scenario, the ordering of contrastive topic and contrastive focus is free, as in (56)a and (56)b. Yet, in the opposite scenario, if \bar{A} -movement of a contrastive topic/focus takes place when it intends to take scope, this derives an ill-formed configuration, as in (56)c, while a contrastive topic moves across a contrastive focus doesn't cause any ill-formedness.¹⁶

¹⁶ The context in (i.) exemplifies (56)c. As shown in B's utterance, the NP *de bonen* is a focus, corresponding to the *wh*-expression in A's question, and is naturally interpreted as a contrastive focus because the food served at the party can be more than beans. In contrast, the NP *Wim* is a contrastive topic, as Speaker B decides to offer information about *Wim* rather than Fred. As shown in (i.B.a.), the contrastive focus *de bonen* can be base-generated and is located below the contrastive topic *Wim*. Nevertheless, the movement of the contrast focus across the contrastive topic, as shown in (i.B.b.), is blocked.

(i.)

A: Hoe zit het met Fred? Wat heft hij dit jaar op het feest gegeten?
 'What about Fred? What did he eat at this year's part?'

B: Nou, dat weet itk niet, maar ik geloof...
 'Well, I don't know, but believe...'

- a. CT > CF [= (56)a]
 Dat_{CT} [Wim] van_{CF} [DE BONEN] meer gegeten heeft
 that Bill from the beans more eaten has
 dan vorig jaar.
 than last year
 'that Bill has eaten more from the beans than last year.'
- b. CF_i > CT > t_i [= (56)c]
 #dan_{CF} [VAN DE BONEN]_i CT [Wim] t_i meer gegeten heeft
 that from the beans Bill more eaten has
 dan vorig jaar.

(56) The relativized ordering of contrastive topic (CT) and contrastive focus (CF)

- a. [...CT...CF...]
- b. [...CF...CT...]
- c. #[CF [...CT...t_{CF}...]]
- d. [CT [...CF...t_{CF}...]]

4.2 Proposal I: AT as a split topicalization and a non-split topicalization

In this dissertation, I propose that NP AT (Type I) and VP AT (Type II) represent two instances of Split Topicalization in the sense that CORE (topic) and REM (focus), when merged as a bare predicative structure over the course of derivation, eventuates with two discontinuous elements in two positions. Following the Distributed Deletion analysis in [Fanselow and Ćavar \(2002\)](#), the apparent split is closely related to the strength of information-structural formal features that have to be checked in the course of derivation. As visualized in (57)a, CORE and REM are merged as a complex predicative structure and are assigned two formal structure respectively in the numeration ([Aboh 2010](#)). As the derivation unfolds, XP is copied and merged to [Spec, FocP], where the [Focus]-feature of REM is checked off by Foc⁰. The XP at [Spec, FocP] is further copied and merged to [Spec,

(Modified from [Neeleman and Vermeulen 2012](#), p.31, ex.64)

By contrast, (ii.) shows that the contrastive topic may follow an in-situ focus (ii.B. a.) or move across it (56)d.

(ii.)

A: Hoe zit het met de soep? Wi heeft die dit op het feest gegeten?

‘What about the soup? Who ate that at this year’s part?’

B: Nou, da tweet ik niet, maar ik geloof...

‘Well, I don’t know, but I believe...’

a. CF > CT [= (56)b]

| | | | | | | | | |
|-------|-----------------|--------|-----|--------|------|---------|-------|------|
| dat | CF [WIM] | ct[van | de | nonen] | meet | gegeten | heeft | dan |
| that | Bill | from | the | beans | more | eaten | has | than |
| vorig | jaar. | | | | | | | |
| last | yeat | | | | | | | |

b. CT_i > CF > t_i [= (56)d]

| | | | | | | | | | |
|-------|--------|-----|---------------------|-----------------|----------------|------|---------|-------|------|
| dat | ct[van | de | bonen] _i | CF [WIM] | t _i | meer | gegeten | heeft | dan |
| that | from | the | beans | Bill | | more | eaten | has | than |
| vorig | jaar. | | | | | | | | |
| last | year. | | | | | | | | |

‘that Bill has eaten more from the beans than last year.’

(Modified from [Neeleman and Vermeulen 2012](#), p.33, ex.67)

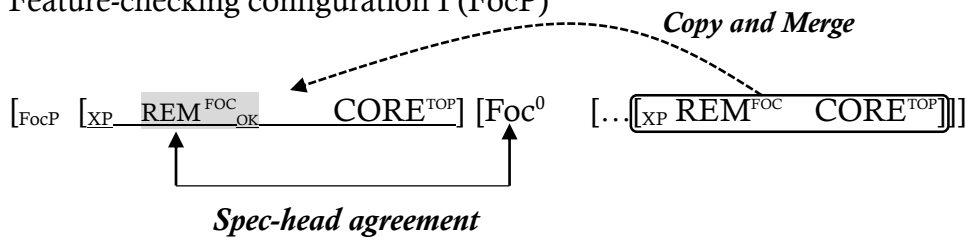
TopP], where the [Topic]-feature of CORE is checked off by Top⁰. Following Fanselow and Ćavar's analysis, the strong features checked at narrow syntax have the phonological reflex at PF. It follows that CORE and REM are able to surface in two disparate positions, giving rise to the split construction. This derivation is made possible because TopP and FocP are able to occur in the periphery of CP and *v*P, accounting for the distributional fact that the F-constituent always follows AT. It follows that AT and the F-marked constituent are allowed to occur in the CP and the TP domain as long as the sequence AT-Focus is respected. One immediate consequence is that AT NP (Type I) and AT VP (Type II) are extracted constituents, consistent with the island violation and lexical identity effects they display.

(57) The proposed analysis of AT NP (Type I) and AT VP (Type II)

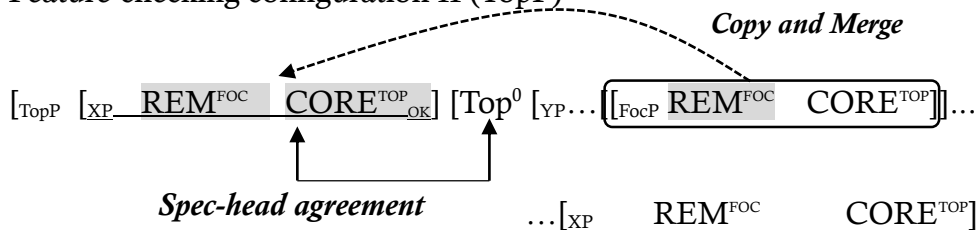
a. Bare predicative structure in the numeration¹⁷

[_{XP} REM^{FOC} CORE^{TOP}]

b. Feature-checking configuration I (FocP)



c. Feature-checking configuration II (TopP)



d. The checked features are splot out at PF.

[_{TopP} [_{XP} ~~REM^{FOC}~~ CORE^{TOP}_{OK}] [_{Top⁰} [_{YP} ...[[_{FocP} REM^{FOC} CORE^{TOP}]]] ...]]
 ... [_{XP} ~~REM^{FOC}~~ ~~CORE^{TOP}~~]

By contrast, VP AT (Type III) represents an instance of Non-Split Topicalization in the sense that VP AT and the VP in the host clause do not form a constituent, and are assigned two information-structural formal features respectively in the numeration. Their

¹⁷ For the reason that will become clear later, CORE corresponds to AT, whereas REM is an F-constituent.

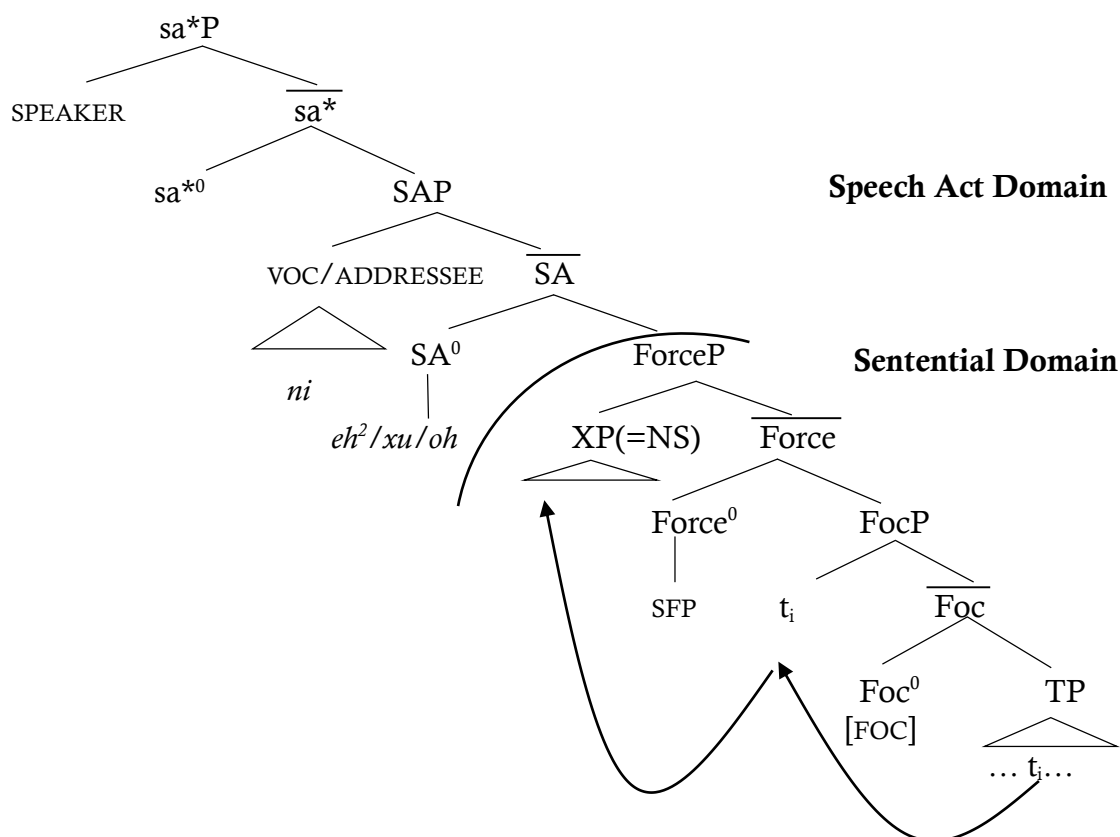
features are checked off by means of external Merge in the corresponding positions.

The first issue of AT suggests that the numeration determines information structure along the line of [Aboh\(2010\)](#), and functional projections in two peripheries (CP and ν P) determines the distribution of lexical items that bear information-structural features, such as topic and focus. Under the Y-model, the proposed analysis concludes that topic and focus are visible to the syntactic computation, not outside the domain of syntax, because they have to be checked off by TopP and FocP allowed to merge to the left periphery of CP or ν P.

4.3 Proposal II: The sa*P analysis of NSs

I argue for the sa*P analysis of Mandarin NSs in line with [Haegeman and Hill's \(2013\)](#) proposed version of the speech act layer, which is an extended layer dominating ForceP. I claim that each interpretative component of Mandarin NSs, including illocutionary force, clause typing information, and the vocative, corresponds to a series of functional projections in the CP periphery, merged as a truncated structure as in (58).

(58) The proposed analysis of NSs in Mandarin



Following the line of pursuit in this dissertation, I argue that the numeration is the level in which the [Focus]-feature is assigned to NSs, but discourse particles have to be substantiated by higher functional projections in the speech act layer. It follows that there is a division of labor between the lexicon and syntax with respect to how they interface with discourse. For concreteness, the speech act layer serves an interface involving the immediate context, which in turn licenses the involvement of discourse roles such as SPEAKER and HEARER. The licensing condition of these two discourse roles have to be externalized in some way to the computation system because it is acutely sensitive to the universality of discourse, which cannot be dictated by the computation system alone. In spite of the nature of externalization, the speech act layer, as part of the syntactic computation, serves as a means of the interface between syntax and discourse. Focus, by contrast, pertains to the truth condition and is independent of the immediate context. Thus, as a formal feature, it can be assigned to NSs in the numeration, different from discourse properties, which I argue have to be clausally substantiated by the speech act layer

5. The plan

This dissertation is structured as follows. Chapter 2 and 3 are devoted to the syntax-discourse investigation of AT and are aimed at endorsing the view that informational structural notions, such as topic and focus, are strong formal features assigned to lexical items in the numeration along the line of [Aboh \(2010\)](#). The feature-checking process of these strong features is permitted by the articulated periphery of CP and ν P; in other words, TopP and FoP in these two peripheries are able to provide feature-checking sites, in sharp contrast to the interface-based account ([Neelman and Van Koot 2008](#); [Szendrői 2001](#); [Reinhart 2006](#)). In Chapter 2, I discuss controversial issues regarding AT in Mandarin, including the misleading notion of aboutness, and describe properties of the three types of AT, which will be followed by a review of previous analyses of AT. It will be shown none of them can be motivated for the properties of the three types of AT. Chapter 3 begins with the discussion about topics in some corners of the previous studies and it will be shown that topic in Mandarin is defined differently on empirical and theoretical grounds, which gives rise to a lack of proper descriptive coverage and theoretical coherence. After showing a close affinity between AT and XP-split constructions in German, I propose that the three types of AT can be refined as split topicalization (ST) and non-split topicalization

(Non-ST): the former involves extraction, while the latter resorts to base generation. I further argue that these two constructions can be derived within the same set of principles.

Chapter 4 and 5 concern NSs in Mandarin. Different from the syntax-discourse facet of AT, I will show that discourse properties of NSs are external to the syntactic computation; in other words, discourse properties are not formal features such as topic and focus, because they involve the discourse role of *SPEAKER* and *HEARER* in the immediate context. Despite the discourse properties not being accessible in the numeration, they still rely on two functional projections in the topmost position of the CP periphery, the speech act layer, for the substantiation of discourse effects exerted on the interpretation of NSs. In Chapter 4, I will underscore the significance of NSs for syntactic theory by offering a review of its complications in the previous studies, and argue that there are only two genuine NSs in Mandarin. It will be shown that the analyses of English NSs cannot apply to NSs. In Chapter 5, I adopt but adapt the sa*P analysis advocated in [Haegeman and Hill \(2013\)](#) and propose that NSs involve a fully-fledged structure of the CP periphery, lending weight to root properties of NSs in other languages ([De Cat 2013](#)).

I will conclude this dissertation with implications for cartographic syntax and the analytical aspects of Mandarin syntax in Chapter 6

2 Aboutness Topic: A Comparative Study

1. Setting the stage: Topichood, topic-comment and aboutness

In this chapter, I address the first issue- The distribution and the derivation of Aboutness Topic (AT) in Mandarin- with the goal of contributing to the line of research pursued in this dissertation, i.e. it will be concerned with investigating the nature of interface between syntax and discourse. A consensual position that has widely taken in previous studies (Badan and Del Gobbo 2011; Frascarelli and Hinterhölzl 2003¹⁸; Cheung 2008, 2013, 2015; Bianchi and Frascarelli 2010, among others) is that AT is located in the highest position in the left periphery of the CP layer, which serves as the gateway toward the interface between syntax and discourse (Rizzi 1997; Cinque 1999; Tsai 2015a, 2015b). As illustrated in (1)a-c, AT in some languages is located in the leftmost position. Nevertheless, its distribution says nothing about how it is related to a constituent in the host clause; for example, the AT *fruits* in (1)a is a hypernym of the NP *apples* in the host clause. What's more, these examples represent a Topic-Comment structure, as visualized in (2). Of great interest is how such structure is formed and interpreted at the syntax-discourse interface. This chapter is preoccupied with these two core questions.

¹⁸ As noted in Frascarelli and Hinterhölzl (2003), AT resists right dislocation in Italian, which amounts to an asymmetry between the fine structure of the left periphery and the right periphery. I will show in Section 2.3.5 that this asymmetry is also observed in Mandarin AT but this has nothing to do with the lack of or truncated structure of the right periphery of the CP layer. The resistance simply indicates that AT is not a canonic topic that encodes old information.

(1) Aboutness Topic in other languages

a. English

[As for fruits]_{AT}, I like apples.

b. Mandarin

[Dianyin]_{AT}, Zhangsan xiang kan Halipote.

Film Zhangsan want watch Harry Potter

‘As for films, Zhangsan want to see *Harry Potter*.’

c. German

[Raubvögel]_{AT} glaube ich kennt Gereon nur Bussarde.

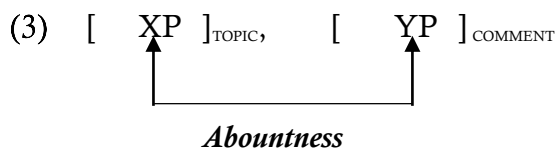
birds of prey believe 1.SG kno Gereon only buzzards

‘As for birds of prey, Gereon knows only Buzzards.’

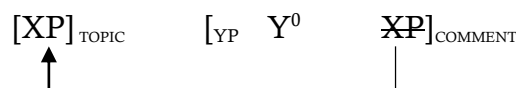
(2) Topic-Comment structure

[TOP] [COMMENT]

It is the standard assumption that the discursual functions of topic can be syntactically represented under the cartographic approach (Rizzi 1997; Cinque 1999), mirroring the transparent mapping between the syntactic distribution and the interpretative properties of topic. In a broad sense, topic can be generic or definite, and is characterized by ‘shared familiarity’ to the speaker and the hearer. It usually occurs in the peripheral position of a clause, say the leftmost position, and is related to the comment, a clause following topic, by aboutness, as visualized in (3). A mild sort of syntactic curiosity is to ask how topic is derived. Is it derived by resorting to overt \bar{A} -movement in (4)a, where a gap is created by the moved XP? Or, is it derived by means of base generation, as shown in (4)b, where XP is merged to a leftmost position?



(4) a. \bar{A} -movement



b. Base generation

[XP]_{TOPIC} [YP Y⁰]_{COMMENT}

The two scenarios in (4)a-b, though heavily simplified, are enacted in many languages. As surveyed by Xu (2006), three major types of topic are observed in Asian languages with respect to their syntactic structures. Take Korean topic structures for example. (5)a shows that the topic NP *ku torwuk* ‘this thief’ undergoes overt movement to the sentence-initial position from the sentence-medial one, given the fact that Korean is a typical SOV language. By contrast, the topic NP *i sacin* ‘this photo’ in (5)b is co-referential with the full NP *i sacin* in the host clause without movement. (5)c, however, is markedly different from the preceding examples in the way that the topic NP *hankwuk* is not directly related to any constituent or associated gap in the comment/host clause and licensed by aboutness.

(5) Three types of topic in Korean

a. Topicalization

[Ku torwuk]_i-un nay-ka t_i cap-ass-ta.
 the thief-TOP I-SUBJ catch-PAST-DEC
 ‘This thief, I caught’.

b. Dislocation

I sacin-un, nay-ka caknyen-ey i sacin-ul ccik-ess-eyo.
 this photo-TOP I-SUBJ last-year-at this photo-OBJ take-PAST-POL
 ‘This photo, I took it last year.’

c. Gapless Topicalization

Hankwuk-to inkwu-ka manh-ta.
 Korea-also population-SUBJ much-DEL
 ‘As for Korea also, the population is large.’

(Modified from Xu 2006, p. 138, ex. (1-3), cited from Sohn 1994, p.192-195)

The most telling examples of (5)a-c are also found in Mandarin, as illustrated in (6). According to Badan and Del Gobbo (2011), Mandarin displays the three types of topic. (6)a involves a trace left by the fronted PP, which suggests that left dislocation (LD) is formed via movement. (6)b does not involve movement, and Hanging Topic (HT)¹⁹ is

¹⁹ A caveat has to be issued here with respect to the use of ‘hanging topic’. In the previous scholarship, two

formed by merging a constituent to a topic position and is co-referential with a resumptive pronoun in the host clause. (6)c and (6)d are two instances of AT, which are formed by merging a constituent XP to the topic position; in other words, the host clause in (6)c and (6)d does not contain an associated gap, also called *gapless topicalization* or *gapless topic structures* (Also see [Li & Thompson 1976, 1981](#), [Huang et al. 2009](#), [Cheung 2008](#), [Jin 2015](#), [Shyu 2014](#), among many others). The relation of AT to the host clause can be licensed by the notion of ‘aboutness’; that is, the topic *hankwuk* ‘Korea’ in (5)c is something about the remaining clause-comment. As one might tell, the line of reasoning in (5)c cannot be extended to (6)c-d; that is, the topic does not say something about the remaining clause-comment. Rather, the topic *hua* ‘flowers’ in (6)c is a hypernym of the NP *meiguohua* ‘roses’ in the host clause, and this line of reasoning also applies to (6)d, which denotes a set-member relation.

(6) Three types of topic in Mandarin

a. Left Dislocation (LD)

[Gei Lisi]_i, Zhangsan ji-le yi-feng xin t_i.
 to Lisi Zhangsan send-ASP one-CL letter
 ‘To Lisi, Zhangsan sends a letter.’

b. Hanging topic (HT)²⁰

Lisi, Zhangsan gei ta liang-ben shu.
 Lisi Zhangsan give him two-CL book
 ‘Lisi, Zhangsan gives him two books.’

kinds of grammatical topics are identified: Non-dangling topics and dangling topics. The former characterizes a structural dependency between a topic NP and an associated gap in (ii.) and a pronoun in (i.). (i.) is proposed to be a hanging topic in the sense that it is base-generated in the left periphery, whereas (ii.) is a dislocated topic in the sentence that the topic is derived via overt movement and this movement creates a gap in the comment clause. The interested reader is referred to [Shi \(2000\)](#), [Pan and Hu \(2002\)](#) and [Ting and Huang \(2006\)](#) for an animated debate regarding the existence of two types of topic in Mandarin.

- (i.) GaoQiang_i na, ZhouHua weile ta_i mei lai zheng shengqi ne.
 GaoQiang PART ZhouHua because he NEG comejust mad SFP
 ‘As for GaoQiang, ZhouHua is being made because he did not come.’
- (ii.) Zhaxie shi_i, wo juedeta shuo Ø_i bu heshi.
 these things I think he say NEG proper
 ‘These things, I think it is not proper for him to say.’

²⁰ The interested reader is referred to [Cheung \(2008\)](#) for the null operator analysis of LD in Mandarin, as LD is not the focus in this dissertation.

- c. Aboutness Topic (AT) 1 [Hypernym-hyponym relation]
 Hua (a), Zhangsan zui xihuan meiguihua.
 flower PART Zhangsan most like rose
 ‘As for flowers, Zhangsan likes roses very much.’
- d. Aboutness Topic (AT) 2 [Set-member relation]
 Wo-de jiaren, wo zui ai baba.
 I-DE family I most love father
 ‘Of my family, I love my father very much.’

Of our immediate concern is two types of aboutness in (6)c-d, as their topic structures contain neither an associated gap nor an overt element that can be interpreted as coreferential with the topic and is responsible for the substantiation of aboutness. Then, one question emerges as to how AT motivates syntactic integration into the rest of the clause.²¹

The notion of *aboutness* has been resisting a precise characterization because of its conceptual and empirical complexities. [Chao \(1968\)](#), for example, suggests that gapless extraction in a topic structure (AT in our sense) is licensed by aboutness. This definition is intended to capture the fact that for an element to be topicalized, it does not have to be sub-categorized for by a verb but only requires that the verb should have to be about it. [Shyu \(1995\)](#) proposes that a topic syntactic structure that does not contain a gap is base-generated in an IP-adjunction site, whereas a topic with a gap undergoes movement to a Spec of a higher functional projection, say [Spec, TopP]. This proposal has been taken at face value in most previous studies, as will be discussed in the following sections, but it says nothing about aboutness. This is reminiscent of a debated issue regarding the notion of aboutness.

Defined in Li and Thompson’s (1976, 1981) work, topic is to ‘set a framework in naming what the sentence is about’ (1981:86). As briefly discussed in Chapter 1, AT or sentence topic in [Reinhart’s \(1982\)](#) sense functions as relating the propositions in the context set to the discourse referents, a process being similar to an entry of a subject catalogue under which information is stored in the library. To modularize the status of topic, [Vallduvì \(1992\)](#) argues for a new level of representation, *Information Structure*,

²¹ The type of AT in (6)c-d is excluded from this dissertation, as discussed in Section 3.1 of Chapter 1, because its syntactic and semantic properties are different from those of the type of AT in (6)c.

bearing resemblance to LF but primarily related to topic rather than purely semantic notions. The idea is that the way our knowledge is stored can be modeled in a set of file cards, with one card for each thing we know. Following this line of reasoning, AT can be regarded as a file card on which we write down many things we know about that card. This is exemplified in (7) and (8). As thoroughly discussed in [Portner and Yabushita \(1998\)](#), the information that *John* met the woman at a café was introduced in (7), with *John* being the topic. This information is recorded on ‘John’s file card.’ Thus, the second sentence in (7) is to add extra information that the woman is a pianist into the common ground on ‘the woman’s file card.’ In contrast, the infelicity of (8) is due to the fact that the presupposition of the topic phrase he met the woman in the café is not recorded on ‘the woman’s file card.’ This contrast is taken to show that topics have a familiarity presupposition sensitive to aboutness.

(7) Jon wa kafe de onna-no-hito ni aumshita. Kanojo wa
 John TOP coffee LOC woman DAT met she TOP
 pianisuto deshita.
 pianist was
 ‘John met a woman at a café. She was a pianist.’

(8) ??[Kare ga kafe de atta onna-no-hito] wa totemo omoshiroi
 he NOM coffee LOC met woman TOP very interesting
 hito deshita.
 person was
 ‘The woman he met in the café was a very interesting person.’

To formalize the notion of aboutness, [Portner \(2005\)](#) proposes a semantic treatment for AT by arguing that AT *Mary* in (9)a is to introduce expressive meaning. By marking a topic, the speaker performs a separate speech act in order to report that his mental representation of the topic is active. For concreteness, according to Portner’s proposal, the performative of the topic NP *Mary* is represented in (9)b. (9)c is the semantic composition of (9)b. One implication from (9)c is that the addressee’s mental representation of *Mary* will be activated by the fact that s/he understands the topic, and so the topic can be therefore motivated in the addressee’s mental representation at the beginning of the

sentence.

- (9) a. Mary, I like her a lot.
b. '(I request that) my mental representation of Mary is active.'
c. $[[\text{TOP}]]^c = [\lambda x \lambda w. \text{speaker}(c)\text{'s mental representation of } x \text{ is active in } w]$

Cheung (2008) also argues for a LF view of aboutness. For example, the aboutness relation between the AT *hua* 'flower' and the comment can be readily captured by the semantic formulation in (10)b, where a free variable over relation (R) to nominal is postulated. (10)b states that flowers have the property of being an *x* such that *Mary* likes roses and roses are related in the *R*-way to *x*. *R* can be interpreted as a kind of relation.

- (10) Cheung's (2008) proposed analysis of aboutness
- a. $[\text{TopP } \text{hua}]$, $[\text{TP } \text{Mali } [\text{VP } \text{zui } \text{xihuan } \text{meiguihua}]]$.
flower Mary most like roses
'As for flowers, Mary likes roses most.'
- b. flowers λx [like (Mary, r) & R (r, x)]

Pan and Hu (2008) provide a set-theoretic formulation of aboutness for the gapless topic structure by characterizing the relation between the topic and the comment with respect to intersection. To be specific, a comment is about a topic when there is an element in the comment that denotes a set whose intersection within the set denoted by the topic has to be non-empty. Take (10) for example. The AT *hua* 'flowers' denotes all these entities that have the property of being a flower, all kinds of flowers, and form a set of sets, which can include a set of roses, a set of sunflowers, a set of violets, etc., and the NP *meiguihua* 'roses' in the host clause has to be included within the superset denoted by fruits. As result of the process of intersection, the non-empty requirement is fulfilled.²²

Within the framework of Generative Lexicon (Pustejovsky 1995), Jin (2015) maintains that aboutness is a manifestation of predicate-comment constructions that are

²² Jin (2015) points out that Pan and Hua's formulation fails to account for the example in (i.), where the AT *hejiu* 'drinking' does not denote entities but events or actions.

- (i.) Hejiu, ta zui xihuan danxiaomaipi
drinking he most like pale ale
'(As for) drinking, he really enjoys pale ale most.'

properly interpreted with respect to their sublexical representations, and attributes the notion of aboutness to the operation of type coercion in gapless topic structures. Take (11) for example. The NP *xianjiao* ‘bananas’ is the actual argument of the predicate *chi* ‘eat’ but it has to be of the proper type to satisfy the predicate’s selectional requirements. Thus, the predicate *chi* ‘eat’ selects a sortal type, that is *shuiguo* ‘fruits’, and the complement NP *xianjiao* ‘bananas’ bears the subtype of that sortal type. To achieve this type shifting, a coercion operation must be activated in order to relate the type of the actual object to the lexically specified type. (11)b represents the process of type coercion, illustrating that the verb *chi* ‘eat’ in (11)a does not directly subcategorize for the type of *bananas*, and, instead, it subcategorizes for the type *fruits*. *Bananas* has to participate in the eating event by shifting its type to its immediate supertype *fruits*.

(11) Type coercion in gapless topic structures (Jin 2015)

- a. Shuiguo, wo zui xihuan chi xianjiao.
 fruit, I most enjoy eat banana
 ‘As for fruits, I enjoy eating bananas’
- b. Θ [bananas \leq fruits]: bananas \rightarrow fruits
 [Θ : coercion operator; \leq subtype relation]

However, it is worth pointing out that the notion of aboutness might be defined at a rather descriptive level. For example, in discussing the topic-prominent structures in Mandarin, Shi (2000) criticizes aboutness for being rather vague in the syntactic fashion, and it fails to license the relation between the topic and the comment, as evident in (12), where the comment indeed says something about the topic; (12) is ruled out, however.

- (12) *[Zhe-jian da-shi]_{TOP}, [wo zhidao Zhang-Xiaozhang cizhi-le]_{COMMENT}.
 this-CL big-issue I know Zhang-Principal resign-ASP

Intended \Rightarrow ‘As for this big issue, I know that Principal Zhang has resigned.’

(Shi 2000, p.389)

For another example, the comment clause in (13) is not about the topic *naixie shumu* ‘those trees’ but their trunks. Chafe (1976) defines a topic as setting ‘a spatial, temporal or individual framework’ in which the predicative relation holds.

- (13) [Neixie shumu]_{TOP}, [shugan da]_{COMMENT}.
 those tree trunk big
 ‘Those trees, (their) trunks are big.’

As summarized in (14), the above discussion, though considerably simplified, suffices to show that aboutness is defined from a rather semantic perspective, as it is put forward primarily to capture ‘an intuitive relation’.

- (14) The summary of the definitional issue about *aboutness*
- a. [Chao \(1968\)](#): A gapless topic structure licensed by aboutness
 - b. [Chafe \(1976\)](#): A frame setting for the predicative relation to hold
 - c. [Reinhart \(1982\)](#): A file card system
 - d. [Portner \(2005\)](#): A expressive meaning associated with the speech act
 - e. [Cheung \(2008\)](#): A free variable over relation (R) to nominal
 - f. [Pan and Hu \(2008\)](#): The intersection between a superset and a subset
 - g. [Jin \(2015\)](#): The sublexical information encoded by the predicate in the comment.

Nevertheless, detailed scrutiny of the summary in (14) characterizes two lines of thinking, as depicted in (15).²³ (15)a can be interpreted as saying that Topic is related to Comment by the notion of aboutness, and syntax plays no role. Interpreted another way, (15)a seemingly presumes a Topic-Comment template, and the template is assigned a particular informational structural interpretation once it is satisfied. Nevertheless, as pointed out by Xu, this template-specific view fails to account for (12). By contrast, (15)b is intended to capture a more non-trivial relation between Topic and XP in Comment, and syntax/LF plays a role in forming a relation Topic and XP. Nevertheless, an immediate challenge is whether syntactic operations/semantic mechanisms suffice to form a Topic-

²³ Another well-known representation of aboutness is represented in (i). It is noted that the leftmost constituent is not directly related to any constituent in the host clause, diverging from (15)b. There is an animated discussion regarding whether the initial topic *nachang dauo* ‘that big fire’ should be analyzed as a topic or a subject. It is argued in [Ting and Huang \(2006\)](#) that *na chang dahuo* ‘that big fire’ is an NP adverbial. I will leave it aside and focus on topic structures that fare well with (15)a and (15)b. The interested reader is referred to [Shi \(2000\)](#) and [Ting and Huang \(2006\)](#) for further discussion. .

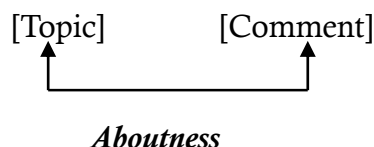
(i) Na-chang da-huo (a), xingkui xiaofangdui lai-DE-kuai.
 that-CL big-fire TOP luckily fire brigade come-RESULT-fast
 ‘As for that big fire, luckily, the fire brigade came quickly.’

Comment relation.

(15) Two lines of thinking from the summary in (14)

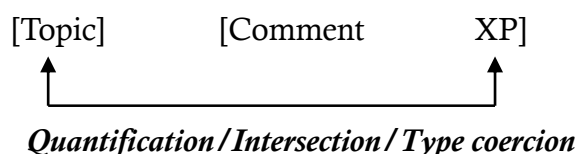
a. **Topic related to Comment by the notion of aboutness**

⇒ Chao (1968); Chafe (1976); Reinhart (1982); Portner (2005)



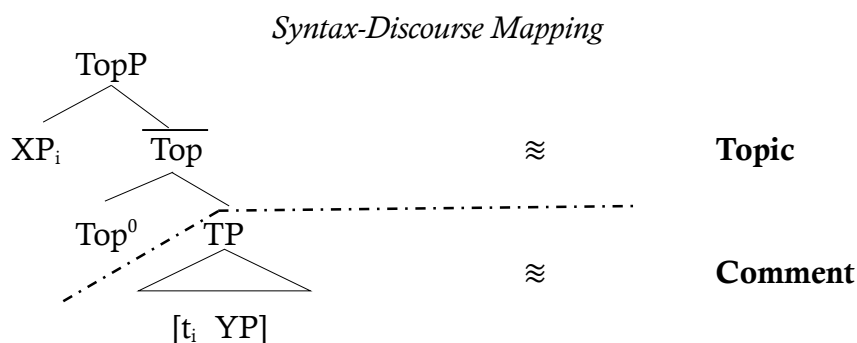
b. **Topic related to Comment by a relation between Topic and XP in Comment**

⇒ Cheung (2008); Pan and Hu (2008); Jin (2015)



As will become apparent in Chapter 3, I argue that two views in (15) can be sustained on empirical and theoretical grounds but there is much redundancy in positing two types of relation as in (15)a-b. Rather, it is explained in the proposed analysis, as visualized in (16), that (i.) Topic-Comment (15)b represents a reflex of the syntax-discourse mapping process under the cartographic approach (Cinque 1999, 2002; Rizzi 1997, 2004) and (ii.) Topic (AT) is related to YP in Comment via movement.²⁴

(16) A snapshot of the proposed analysis of AT in Chapter 3



Nevertheless, it is not my attempt to provide an exhaustive discussion of the semantics of AT; instead, my aim is at investigating the distribution of AT and its derivation with

²⁴ A word of reminder is that there is one type of AT in Mandarin not derived via movement. Instead, it is derived via base generation. More details will be provided in Section 2 of this chapter.

respect to a set of information structural effects it induces at the syntax-discourse interface. It follows that aboutness is a reflex of a mapping relation between a syntactic configuration and its interpretative properties. In this chapter, I investigate two core properties of AT, its distribution and derivation in other languages and Mandarin which I will argue shed light on several core aspects of the syntax-discourse interface.

The first property is related to the designated position of AT. In much recent literature on the left periphery inspired by Rizzi's (1997) seminal paper, one view that has gone unquestioned is that fronted topics occupy a designated position, that is [Spec, TopP]. This view itself paves the way for two accompanying questions. First, from a rather impressionist's view, there are three major types of topic (See Xu 2006; Badan and Del Gobbo 2011, Cheung 2008, 2015, among others), Left Dislocated Topic (LDT), Hanging Topic (HT), and Aboutness Topic (AT). An interesting question is in what way these types of topic are markedly distinct from each other with respect to their distribution in the left periphery, and the syntactic constraints they might impose on the host clause. For example, as alluded in Rizzi (1997), CL(itic)L(eft)D topics in Romance languages and fronted topics in English basically occupy [Spec, TopP] in the left periphery. Haegeman (2004), however, argues that the CLLD constituent is only found in the syntactic environment that resists topicalization in English and the differences can be ascribed to the internal makeup of the left periphery where fronted topics in English and the CLLD are allowed to occur, which gives rise to the notion of the Main Clause Phenomena (MCP) or truncation.

The second question is whether the merge of TopP or the application of topicalization is restricted only to root clauses or embedded clauses with root properties (Emonds 1970). Reinterpreting Hooper and Thompson's (1973) own discussion, Haegeman (2004) contends that root properties are licensed in domains consisting of 'more functional structures,' and certain domains devoid of a particular layer of functional structures do not exhibit root phenomena. Grewendorf (2002) takes the view that embedded clauses vary as to which layer of CP is projected or not, and this is closely related to the selectional properties of the matrix verb.

The empirical basis in this chapter consists of AT in other languages and Mandarin, the latter being emphasized. As will become apparent later, the distribution and the derivation of AT has received substantial attention in the literature (Tsai 1994; Shyu 1995; Badan and Del Gobbo 2007, 2011; Cheung 2008, 2015, among others), and it is consistently agreed that AT is externally merged in the highest \bar{A} -position in the left

periphery of CP. I present novel observations and generalizations showing that such view cannot be sustained. Precisely, the distribution of AT is wider than discussed in the previous studies, and there is concrete evidence in support of the view that two subtypes of AT are derived via movement and one subtype is derived via base generation.

The organization of this chapter is as follows. Section 2 is to provide a proper empirical characterization of AT, underscoring diagnostic evidence and new generalizations that have gone unnoticed in the previous scholarship. Section 3 and 4 are to discuss the distribution and the derivation of AT in previous studies. In Section 3, I focus on the designated position of AT in the left periphery of ν P/CP, and in Section 4, I address the base generation-movement paradox with respect to how AT is derived at syntax. Section 5 concludes this chapter with the core observations that will be accounted for in Chapter 3.

2. Types of AT: Novel observations and generalizations

To begin with, I argue for three types of AT in Mandarin, as exemplified in (17), especially (17)b and (17)c not being noticed in the previous scholarship. In (17)a, AT is a NP, and there is a semantic relation between AT and the NP object in the host clause, which can be characterized as a set-member relation (Pan and Hu 2008), a hypernym-hyponym relation, a taxonomic relation (Dayal 2004) and a predicative relation (Jheng 2013, 2014). In (17)b, AT is a bare VP and it also contains a AT NP related to the NP object in the host clause.²⁵ One distinct feature of VP AT (Type II) is that the verb (i.e. *chi* ‘eat’) in VP AT has to be identical to the verb (i.e. *chi* ‘eat’) in the host clause. In sharp contrast, in (17)c, AT is also a bare VP but it differs from VP AT (Type II) in that the verb (i.e. *qu* ‘go’) in VP AT can be different from the verb *xuan-da* ‘choose to take’.

(17) Three types of AT in Mandarin

a. NP AT (Type I)

[_{NP} Shuiguǒ]_{AT}, Zhangsan zui ai chi pingguo.
fruit, Zhangsan most like eat apple

‘As for fruits, Zhangsan likes to eat apples very much.’

b. VP AT (Type II)

²⁵ More evidence in support of the view that VP AT (Type II) is a bare VP is offered in Section 2.4.2.

[_{VP} Chi shuiguo]_{AT}, Zhangsan zui ai chi/*mai pingguo.
 eat fruit, Zhangsan most like eat/buy apple
 ‘As for eating fruits, Zhangsan likes to eat apples very much.’

c. VP AT (Type III)

[_{VP} Zuo yundong]_{AT}, Zhangsan hui da paiqiu.
 do exercise Zhangsan will play volleyball
 ‘As for doing exercise, Zhangsan will play volleyball.’

It is worth noting that AT, a subtype of topic, plays a conspicuous role in linking a syntactic structure to the discourse. Rizzi (2005) stipulates that topic is endowed with two criterial features, [+D-linking] and [+aboutness], but the subject lacks [+aboutness]. [+D-linking] is a discourse-related property. Pan (2014) notes that the base-generated topic (AT in our sense) cannot be a *wh*-phrase. He attributes the infelicity of (18) to a general semantic constraint on interrogatives; that is, to question a ‘kind’ item in a context containing only its ‘sub-kind’ (hyponym) is illicit.

(18) *[Sheme], ni zui xihuan meiguohua.
 what you most like rose

Intended ⇒ ‘As for what kind of flowers, do you like roses very much?’

In the following sub-sections, I will adduce diagnostic evidence showing that AT (Type I) and (Type II) involve ‘invisible extraction’, while VP AT (Type III) does not.

2.1 Information structural makeup of AT

The point of departure for the following discussion is to characterize the information structural arrangement of AT. Tsao (1990) contends that in Mandarin, the left-dislocated material is a topic to which the main clause is about, which gives rise to the notion of aboutness. An immediate question one might raise is whether aboutness is syntactically derived or is ascribed as an information structural notion. In addition to the above descriptions, to any speaker of Mandarin, if the response in (19) is uttered out of blue, a mild sort of awkwardness arises. This awkwardness disappears once it is served as a response to a yes-no question in (19).

(19) Question: Ni xihuan chi shuiguo ma?
 you like eat fruit SFP
 ‘Do you like to eat fruits?’

Response: [Shuiguo]_{AT} (ah), wo xihuan chi [pingguo].
 Fruit TOP I like eat apple
 ‘As for fruits, I like to eat apples.’

Under an unbiased context, a response to the Yes/No question like (19) is employed to confirm the truth condition of a proposition that has been established in the question. In this light, the question in (19) is left with its truth condition being open, and a simple response in (19) is presumed to simply confirm the condition. Nevertheless, rather than simply confirming the truth condition of the Yes/No question, additional information is encoded by repeating the NP *shuiguo* ‘fruit’ in the sentence-initial position and F(ocus)-marking another NP *pingguo* ‘apples’ as new information in the host clause, as illustrated in (20).

(20) Information structural template of AT

[XP]_{AT} [YP]_{FOC}

It is noteworthy that AT (or gapless topic structure) always involves a topic-focus IS template, and this template has its particular discursual function. Take (21) for example. AT *shuiguo* ‘fruits’ in (21) denotes a contextually available set of alternatives {apples, oranges, bananas, etc.}, and the F-marked NP *pingguo* ‘apples’ is uttered directly and picks an alternative from the set. This template is formed by copying some material from the given (old) information, merging it to the sentence-initial position, and F-marking another new material in the host clause. (21) also shows that another contrastive focus can be added.

(21) [Shuiguo]_{AT} / Zhangsan xihuan chi [pingguo]_{FOC}, (bu xihuan chi
 fruit Zhangsan like eat apple NEG like eat
 [xiangjiao]_{FOC}
 banana

‘As for fruits, Zhangsan likes to eat apples, (not bananas).’

The line of reasoning pursued above also applies to VP AT (Type II) and VP AT (Type III), as represented in (22) and (23) respectively. It should be noted that the size of AT is closely related to the F-domain. As can be seen below, if AT is a VP-sized constituent, its F-domain must be marked in the same way. (22) can be interpreted as saying that there is a contextually available set of alternatives, {eating apples, eating oranges, eating bananas, and so on}, denoted by AT *chi shuiguo* ‘eating fruits’, and the F-marked picks an alternative out of the set. Again, this topic-focus association is taken to show that AT different from LD and HT in the way that though there is no apparent associated gap in the host clause, AT has to be related to a clause-internal constituent by enforcing this IS constraint. In the same vein, (23) is interpreted as saying that there is a contextually available set of alternatives, {playing basketball, swimming, and so on}, denoted by AT *zuo yundong* ‘do exercise’, and the F-marked VP *da lanqiu* ‘play basketball’ is included in the set.

(22) Information structural template of VP AT (Type II)

Question: Ni xihuan chi shuiguo ma?
you like eat fruit SFP
‘Do you like to eat fruits?’

Response: [_{VP} Chi shuiguo]_{AT} (ah), wo zui xihuan [chi pingguo]_{FOC}.
eat fruit TOP I most like eat apple
‘As for eating fruits, I like to eat apples very much.’

(23) Information structural template of VP AT (Type III)

Question: Ni changchang zuo yundong ma?
you often do exercise SFP
‘Do you often do exercise?’

Response: [_{VP} Zuo jundong]_{AT} (ah), wo zhi hui [da lanqui]_{FOC}
do exercise TOP I only can play basketball
(qita duo bu xihuan)
others all NEG like
‘As for doing exercise, I only can play basketball, (and do not like other types of exercise).’

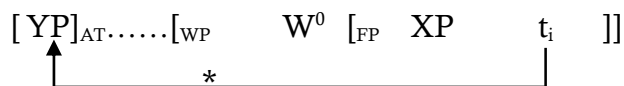
The current discussion indicates that the presence of AT usually incarnates a topic-focus template that is endowed with a IS interpretation. What concerns us in this chapter is how AT is derived at syntax so that it is able to form such template that can receive a proper IS information at the syntax-discourse interface.

2.2 Evidence for \bar{A} -movement

Note that two scenarios are posited here, as visualized in (24), for the sake of discussion in the following sub-sections. Scenario One in (24)a shows that XP merges with YP to a form FP, and YP undergoes movement out of FP to a higher position in the course of derivation. If WP is presumably an island, extraction of YP induces island effects. Then, the observed island effects can be treated as a sign of movement, though there is no apparent gap in FP on the surface.²⁶ In striking contrast, Scenario Two in (24)b illustrates the absence of island effects, because YP is base-generated in a high position and no extraction takes place.²⁷

(24) Two scenarios for movement and base generation

a. Scenario One: movement



b. Scenario Two: Base generation



²⁶ The similar scenario is also advanced in Ott (2011) in testing \bar{A} -properties of German split topicalization. I will discuss Ott's analysis in Chapter 3.

²⁷ To capture a connection between the leftmost phrase and the resumptive element in the clause in the case of the clitic left dislocation in Italian, Cinque (1997) argues for two possible derivations, as shown in (i.) and (ii.), which are similar to the posited scenarios in (24)a. Both (i.) and (ii.) predicts the presence of island effects. (i.) shows that TOP is base-generated in the sentence-internal position and is moved to the sentence-initial position by *Move* α , a co-indexed trace being left behind. By contrast, (ii.) shows that TOP is base-generated in the sentence-initial position and it is connected to the adjacent COMP of a corresponding *wh*-phrase.

(i.) Movement account

[_s TOP [_s COMP [_s ... (CL) ... [α X]]]]]

(ii.) Base generation

[_s [_{TOP} [α X]] [_s [COMP] [_s ... (CL) ... [α +*wh*]]]]]

2.2.1 Island effects²⁸

2.2.1.1 Complex NP island constraint

Two types of complex NP islands are used here to diagnose island effects of the three types of AT; they are **relative clauses** in b-sentences in (25)b, (26)b and (27)b and **NP-TP structures** in (25)c, (26)c and (27)c. It is shown that NP AT (Type I) in (25)b-c and VP AT (Type) in (26)b-c consistently induce island effects. In sharp contrast, island effects are not observed in the case of VP AT (Type III) in (27)b-c. The presence of island effects in (25) and (26) suggests that AT in Type I and Type II might be an extracted constituent, while AT in Type III might be a base-generated constituent. More diagnostic evidence is offered in the following sub-sections.

(25) Complex NP constraint: NP AT (Type I)

a. NP AT (Type I)

[_{NP} Shuiguo]_{AT}, Zhangsan zui ai chi liulian.
fruit Zhangsan most like eat durian

‘As for fruits, Zhangsan likes to eat durians very much.’

b. NP AT (Type I) in the complex NP island (relative clause)²⁹

*/#[_{NP} Shuiguo]_{AT}, Zhangsan renshi [_{NP} [_{RC} ai chi liulian] de ren]].
fruit Zhangsan know like eat durian DE person

Intended ⇒ ‘As for fruits, Zhangsan knows the person who likes to eat durians.’

²⁸ As noted by Myers (2012), the processing of adjunct islands in Mandarin involves parsing complications, (acceptability for CED violations can shift, for example). I will leave aside adjunct islands as an indicator of \bar{A} -properties for the time being. As evidenced in (i.), there is no apparent violation of the adjunct island constraint if the AT is extracted out of the *when*-clause. This is not surprising, as shown in (ii.), where the extraction of the *wh*-phrase *sheme dongxi* does not induce any violation of the adjunct island constraint.

(i.) [_{NP}Kafei]_{AT}, [dan Zhangsan pao Cappuccino de
coffee when Zhangsan brew Cappuccino MOD
shihou], ta xinqin tebie hao.
time he mood especially good
‘As for coffee, when Zhangsan makes a cup of Cappuccino, he is always in a good mood.’

(ii.) SHEME DONGXI, [dan Zhangsan zai mai de shihou], ta yujian-le Lisi.
what goods when Zhangsan PROG buy MOD time he meet-ASP Lisi
‘As for what thing, when Zhagnsan was buying it, he met Lisi.’

²⁹ A word of clarification is that (25)b is judged as acceptable in Huang, et al. (2009), which is taken as evidence in favor of the base generation of AT. But, (25)b is marginally acceptable, as pointed out by some native speakers of Mandarin I consulted.

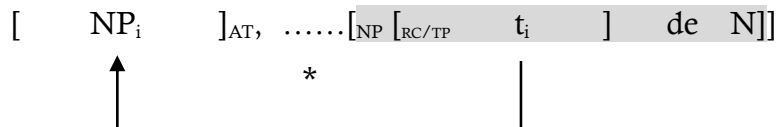
c. NP AT (Type I) in the complex NP island (complement clauses of noun)

*/#_{[NP Shuiguo]_{AT}}, Zhangsan tingshuo [_{[NP [TP Lisi chi-le liulian]}]
 fruit Zhangsan hear Lisi eat-ASP durian
 de yaoyan]].

DE rumor

Intended ⇒ ‘As for fruits, Zhangsan hears the rumor that Lisi ate durians.’

d. Illustration of (25) b-c



(26) Complex NP constraint: NP AT (Type II)

a. VP AT (Type II)

[_{[VP Chi shuiguo]_{AT}}, Zhangsan zui ai chi liulian.
 eat fruit Zhangsan most like eat durian

‘As for eating fruits, Zhangsan likes to eat durians very much.’

b. VP AT (Type II) in the complex NP island

*/#_{[VP Chi shuiguo]_{AT}}, Zhangsan renshi [_{[NP [RC ai chi liulian]}]
 eat fruit Zhangsan know love eat durians
 de ren]].

DE person

Intended ⇒ ‘As for eating fruits, Zhangsan knows the person who likes to eat durians.’

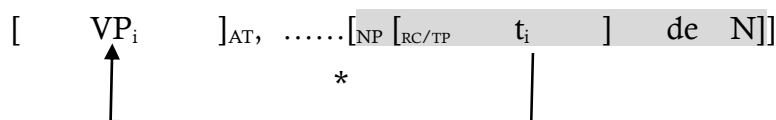
c. VP AT (Type II) in the complex NP island (complement clauses of noun)

*/#_{[VP Chi shuiguo]_{AT}}, Zhangsan tingshuo [_{[NP [TP Lisi chi-le}
 eat fruit Zhangsan hear Lisi eat-ASP
 liulian] de yaoyan]].

durian DE rumor

Intended ⇒ ‘As for eating fruits, Zhangsan hears the rumor that Lisi ate durians.’

d. Illustration of (26)b-c



(27) Complex NP: VP AT (Type III)

a. VP AT (Type III)

[_{VP} Zuo yundong]_{AT}, Zhangsan tongchang hui xuan da
do exercise Zhangsan usually will choose play
paiqiu.
volleyball

‘As for doing exercise, Zhangsan usually chooses to play volleyball.’

b. VP AT (Type III) in the complex NP

[_{VP} Zuo yundong]_{AT}, Zhangsan renshi [_{NP} [_{RC} ai da
do exercise Zhangsan know like play
paiqiu] de ren].
volleyball de person

‘As for doing exercise, Zhangsan knows the person who likes to play volleyball.’

c. VP AT (Type II) in the complex NP island (complement clauses of noun)

[_{VP} Zuo yundong]_{AT}, Zhangsan tingshuo [_{NP} [_{TP} Lisi ai
go Penghu Zhangsan hear Lisi like
da paiqiu] de xiaoxi]].
play volleyball de news

‘As for doing exercise, Zhangsan heard the news that Lisi likes to play volleyball.’

d. Illustration of (27)b-c

[_{VP}₁]_{AT},[[_{RC/TP} _{VP}₂] de N]

2.2.1.2 Sentential subject island constraint

(28)b is an instance of the violation of sentential subject island constraint in the sense that the constituent *Meiguo* ‘America’ is extracted out of the domain which is not properly governed in the sense of CED (Huang 1982).

(28) Sentential subject island constraint in Mandarin

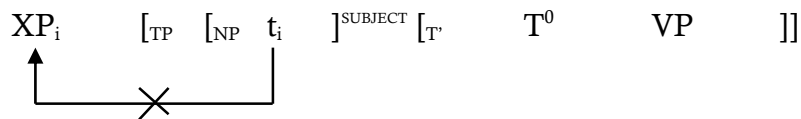
a. [Zhangsan qu Meiguo luxing] shi women dou hen
Zhangsan go America travel make us all very
jingya
surprised

‘That Zhangsan went to America for traveling made us very surprised.’

- b. *Meiguo_i, [Zhangsan qu t_i luxing] shi women dou hen
 America Zhangsan go travel make us all very
 jingya
 surprised

Intended ⇒ ‘America, that Zhangsan went to for traveling made us feel surprised.’

(29) Illustration of the sentential subject island constraint



The observation in (30) is consistent with what has been found in Section 2.2.1.1; NP AT (Type I) and VP AT (Type II) are sensitive to the sentential subject island constraint, while VP AT (Type III) is not. Again, the line of pursuit is that NP AT (Type I) and VP AT (Type II) are the extracted constituents.³⁰

(30) AT in the sentential subject island constraint

- a. NP AT (Type I)

*/#[Shuiguo]_{AT}, [Zhangsan xihuan chi liulian] shi women dou
 fruit Zhangsan like eat durian make us all
 hen jingya
 very surprised

Intended ⇒ ‘As for fruits, that Zhangsan likes to durians makes us feel very surprised.’

- b. VP AT (Type II)

³⁰ Admittedly, there is another complication regarding the sentential subject island test here. (30)a-b might sound acceptable to some speakers of Mandarin, and this might be due to a possibility that the AT(=XP) is not parsed as being extracted out of the sentential subject but targets a position in the left periphery of the sentence subject, as visualized in (i), compared with (29). If this possibility is entertained, the acceptability of (30)a-b is therefore explained. Still, to many speakers of Mandarin, (30)a-b are not fully acceptable. I leave this complication aside for the time being, as it remains to be explored whether the sentential subject has a fully-fledged structure of CP to accommodate a topic or not. Despite the complication, granted (i.), I think the discussion here might respond to the subject-object extraction asymmetry of AT observed by Chung-Yu Barry Yang (p.c.).

- (i.)



*/#_[VP Chi shuiguo]_{AT}, [_{Zhangsan xihuan chi liulian}] shi
 eat fruit Zhangsan like eat durian make
 women dou hen jingya.
 us all very surprised

Intended ⇒ ‘As for eating fruits, that Zhangsan likes to durians makes us feel very surprised.’

c. VP AT (Type III)

[VP Zuo yundong]{AT}, [_{Zhangsan hui xuan da paiqiu}]
 do exercise Zhangsan will choose play volleyball
 shi women jingya.
 make us surprised

‘As for doing exercise, that Zhangsan will choose to play volleyball makes us very surprised.’

2.2.2 The licensing of parasitic gaps

It has been established that overt \bar{A} -movement is a necessary licensing condition for parasitic gaps (Engdahl 1983; Horstein & Nunes 2002; Nissenbaum 2000; Lin 2005; Ting and Huang 2008); namely, a gap posited in adjunct islands can be licensed if a \bar{A} -chain created via overt movement is derived. Consider two scenarios in (31). In (31)a, if AT is an \bar{A} -extracted constituent, PG can be licensed. By contrast, as shown in (31)b, if AT is an A-extracted constituent,³¹ PG is not licensed. Let’s apply these two scenarios to the three types of AT as follows.³²

³¹ Following Shyu’s discussion (2001), IP-internal NP-movement is characterized as A-movement, evidenced by the clausal boundedness and the lack of reconstruction in (i) and (ii). I will take her account at a face value without further ado for the time being.

(i) Clausal boundedness

*Zhangsan Mali_i rewei [_{CP Lisi hen xihuan t_i}].
 Zhangsan Mary think Lisi very like
 ‘Zhangsan thinks that Lisi likes Mary.’

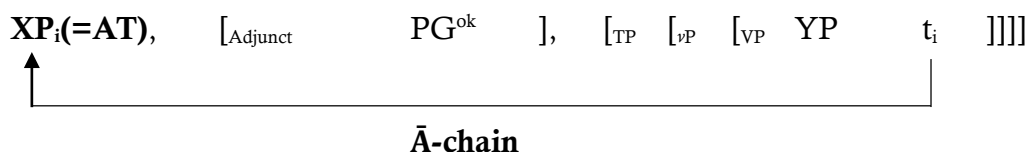
(ii) LF undoing effects

??Wo [na-xie taziji_i de shu]_j yijing jiao Zhangsan_i xian na-zou le t_j.
 I that-CL self’s DE book already ask Zhangsan first take-away ASP
 ‘I have asked Zhangsan to take away his own book.’

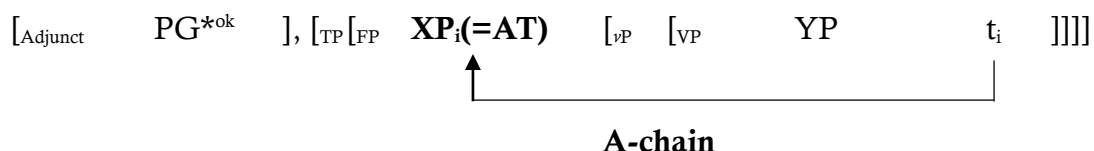
³² It is admitted that the licensing of parasitic gaps as a diagnostic test might not be convincing as it looks, as evident from (32), (33) and (34). However, I suggest that this can be due to the fact that AT is allowed to occur in the TP-internal position, though the linear order seems to suggest that it is already extracted to a

(31) The PG licensed by the \bar{A} -chain derived by the extracted \bar{A} -XP

a. The PG licensed



b. The PG not licensed



The contrast between a-sentences and b-sentences in (32) and (33) lends support to the scenario in (31)a. In other words, the position of AT is closely related to the licensing condition of the parasitic gap. An empirical translation of the contrast suggests that overt \bar{A} -movement is involved in (32)a and (33)a, because A-movement fails to license the PG in (32)b and (33)b. In marked contrast, (34) shows that no \bar{A} -movement takes place, thus the PG not being licensed. It is admitted that the postulation of the PG in the adjunct clauses in (34) might be *ad hoc* at first glance, but the contrast in (32)a-b and (33)a-b and the non-contrast in (34)a-b still hold for some reason.

(32) NP AT (Type I)

a. \bar{A} -extracted AT/ PG licensed

| | | | | | |
|-------------------------|---------------|---------|---------------|------------|-----------|
| [Xiezi] _{AT} , | [zai Zhangsan | jueding | mai | yundongxie | PG |
| shoes | at Zhangsan | decide | buy | sneakers | |
| de shihou], | wo yijin | mai-le | pixie. | | |
| DE time | I already | buy-ASP | leather.shoes | | |

‘As for shoes, when Zhangsan decided to buy a pair of sneakers, I already bought a pair of leather shoes.’

b. A-extracted AT/ PG not licensed

| | | | | |
|---------|----------|---------|-------------------------------|-----------|
| */#[Zai | Zhangsan | jueding | mai yundongxie _{REM} | PG |
| at | Zhangsan | decide | buy sneakers | |

higher position, which is not, actually.

de shihou], wo, [xiezi]_{AT} yijin mai-le pixie.
 DE time I shoes already buy-ASP leather.shoes

(33) VP AT (Type II)

a. \bar{A} -extracted AT/ PG licensed

[_{VP} Mai [xiezi]]_{AT}, [zai Zhangsan jue ding mai
 buy shoes at Zhangsan decide buy
 yundongxie **PG** de shihou], wo yijin mai-le
 sneakers DE time I already buy-ASP
 pixie.
 leather.shoes

‘As for buying shoes, when Zhangsan decided to buy a pair of sneakers, I already bought a pair of leather shoes.’

b. A-extracted AT/ PG not licensed

?/#[Zai Zhangsan jue ding mai yundongxie **PG** de
 at Zhangsan decide buy sneakers DE
 shihou], I, [_{VP} mai [xiezi]]_{AT} yijin mai-le
 time wo buy shoes already buy-ASP
 pixie
 leather.shoes

(34) VP AT (Type III)

a. Hypothetical \bar{A} -extracted AT/ PG not licensed

*[_{VP} Zuo yundong]_{AT}, [zai Zhangsan jue ding da paiqiu **PG**
 do exercise at Zhangsan decide play volleyball
 de shihou], Lisi yijin zai da lanqiu.
 DE time Lisi already PROG book basketball

‘As for doing exercise, while Zhangsan decides to play volleyball, Lisi is already playing basketball.’

b. Hypothetical A-extracted AT/ PG not licensed

*[zai Zhangsan jue ding da paiqiu **PG** de shihou]
 at Zhangsan decides play volleyball DE time
 , Lisi, [_{VP} zuo yundong]_{AT}, yijin zai da lanqiu.

Lisi do exercise already PROG play basketball
 ‘As for doing exercise, while Zhangsan decides to play volleyball, Lisi is already playing basketball.’

2.2.3 A mixture of A-movement and \bar{A} -movement³³

If AT is derived via movement, from a rather impressionist’s view, can it be analyzed on a par with object fronting? It is argued in Shyu (1995) that movement to a TP-internal position is regarded as A-movement. Shyu (1995, 2001) further points out that object fronting is not allowed to move across the embedded context, and argues that object fronting is characterized as A-movement. As evident in (35)a, object fronting is allowed to undergo \bar{A} -movement out of the embedded clause to the sentence-initial position, but this is blocked when the fronted object targets an A-position in the TP layer of the matrix clause, as shown in (35)b.

(35) Object fronting in Mandarin

- a. [Zhe-ben shu]_i laoshi zhidao [_{CP} xuesheng du-guo t_i].
 this-CL book teacher know student read-ASP
 ‘This book, the teacher knows that students read it.’
- b. *Laoshi [zhe-ben shu]_i zhidao [_{CP} xuesheng du-guo t_i].
 teacher this-CL book know student read-ASP
Intended ⇒ ‘The teacher, this book, knows that students read it.’

As shown in (36)b and (37)b, NP AT (Type I) and VP AT (Type II) behave similarly to the object fronting phenomenon in (35)b in the sense that AT cannot undergo A-movement across the embedded clause to a TP-internal position. (36)a and (37)a are taken to show that NP AT (Type I) and VP AT (Type II) can undergo \bar{A} -movement to a sentence-initial position in the CP layer. In addition, it is predicted that movement of NP AT (Type I) and VP AT (Type II) to a TP-internal position is made possible in the matrix clause.

³³ I take at face value that the A- and \bar{A} -distinction has to do with clausal boundedness. It is admitted in some languages, Dutch for example (Neeleman & de Koot 2008, Neeleman & Vermeulen 2012), A-movement and \bar{A} -movement affect the interpretative properties of moved constituents. In Dutch, \bar{A} -scrambling operations are to mark the scrambled DP as being interpreted as a contrastive focus or a contrastive topic, whereas A-scrambling operations are to require the scrambled to be discourse-anaphoric. It remains to be examined whether the distinction holds for Mandarin.

This prediction is born out in (36)c and (37)c. Apparently, NP AT (Type I) and VP AT (Type II) exhibit a mixture of A-movement and \bar{A} -movement according to their landing sites.³⁴

(36) NP AT (Type I) is not allowed to move out of the embedded clause to a TP-internal position

- a. [_{NP} Shuiguo]_{AT}, Zhangsan zhidao [_{CP} Lisi ai chi pingguo].
 fruit Zhangsan know Lisi like eat apple
 ‘As for fruits, Zhangsan knows that Lisi likes to eat apples.’
- b. */?Zhangsan, [_{NP} shuiguo]_{AT}, zhidao [_{CP} Lisi ai chi pingguo].
 Zhangsan fruit know Lisi like eat apple
Intended ⇒ ‘Zhangsan, as for fruits, knows that Lisi likes to eat apples.’
- c. Zhangsan [_{NP} shuiguo]_{AT} zui ai chi pingguo.
 Zhangsan fruit most like eat apple
 ‘Zhangsan, as for fruits, likes to eat apples very much.’

(37) VP AT (Type II) is not allowed to move out of the embedded clause to a TP-internal position

- a. [_{VP} Chi shuiguo]_{AT}, Zhangsan zhidao [_{CP} Lisi ai chi pingguo].
 eat fruit Zhangsan know Lisi like eat apple
 ‘As for eating fruits, Zhangsan knows that Lisi likes to eat apples.’
- b. *Zhangsan, [_{VP} chi shuiguo]_{AT}, zhidao [_{CP} Lisi ai chi pingguo].
 Zhangsan eat fruit know Lisi love eat apple
Intended ⇒ ‘Zhangsan, as for eating fruits, knows that Lisi likes to eat apples.’
- c. Zhangsan [_{VP} chi shuiguo]_{AT} zui ai chi pingguo.
 Zhangsan eat fruit most like eat apple
 ‘Zhangsan, as for eating fruits, likes to eat apples very much.’

The asymmetry also holds for VP AT (Type III). Nevertheless, a conclusive view from Section 2.2.1 and 2.2.2 has shown that VP AT (Type III) might be a base-generated constituent because it displays the absence of island effects and does not license parasitic

³⁴ Surely, one might doubt whether the subject *Zhangsan* in (36b) and (37b) is located at [Spec, TP]. Due to the topic prominent nature of Mandarin, it is possible that the subject is at [Spec, TopP], as argued in Tsai (2015a).

gaps. This might lead one to ask whether the operation of base generation is blocked in the TP domain. Nevertheless, it is noted in (38)b that VP AT (Type III) cannot occur in the TP-internal position.

(38) VP AT (Type III) is allowed to move out of the embedded clause

a. [_{VP} Zuo yundong]_{AT}, Zhangsan zhidao [_{CP} Lisi hui da
do exercise Zhangsan know Lisi will play
paiqiu].

volleyball

‘As for doing exercise, Zhangsan knows that Lisi will play volleyball.’

b. *Zhangsan, [_{VP} zuo yundong]_{AT}, zhidao [_{CP} Lisi hui da
Zhangsan do exercise know Lisi will play
paiqiu].

volleyball

Intended ⇒ ‘Zhangsan, as for doing exercise, knows that Lisi will play volleyball.’

2.2.4 Lexical identity effects

Verb doubling, as a syntactic operation, is to copy a verb and merge it to the sentence-initial position, as illustrated (39)a. [Cheng and Vicente \(2013\)](#) argue that the doubled verb in the sentence-initial position is derived via overt movement, as evidenced by island effects in (39)b-c.

(39) Verb doubling in Mandarin

a. Chi, wo shi chi-guo, (buguo)...
eat I COP eat-ASP but

‘As for eating, I have (indeed) eaten, but...’

b. Adjunct island

*Chi, [ta shi yijing chi-le yihou], wo cai
eat he COP already eat- ASP after I then
huidao jia (buguo)...
return home but

Intended ⇒ ‘As for eating, I returned home after he has indeed already eaten,

but...’ (Cheng and Vicente 2013, ex. 12a)

c. Complex NP island

*Kan, wo tongyi [nei-ge ta shi kan-guo yici] de
see I agree that-CL he COP see- ASP one.time DE
kanfa]], buguo...
opinion but

Intended ⇒ ‘As for seeing, I agree with the opinion that he has indeed seen it once, but...’ (Cheng and Vicente 2013, ex. 12b)

It should be noted that verb doubling in point does not involve the direct object, though the verb in (39)a is transitive, different from VP AT (Type II), where the direct object in two VPs can be different. It is argued in Cheng and Vicente (2013) that verb doubling exhibits lexical identity effects, according to which the verb and the low verb must bear the same phonetic identity. Cheng and Vicente treat the lexical identity effects as conclusive evidence that the doubled verb is copied from the main verb in the spirit of the Copy Theory of movement (Chomsky 1993), in addition to the island-sensitivity evidence. Clearly, lexical identity effects are also observed in VP AT (Type II), as shown in (40), where the verb in two VPs has to be identical but their direct objects can be different. In marked contrast, VP AT (Type III) does not exhibit the lexical identity effects, as in (41).

(40) AT VP (Type II)

[_{VP} Chi/*mai/*xuan shuiguo], Zhangsan xihuan [_{VP} chi xiangjiao].
eat/buy/select fruit Zhangsan like eat banana
‘As for eating/*buying/*selecting fruits, Zhangsan likes to eat bananas.’

(41) AT VP (Type III)

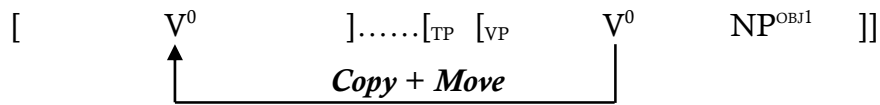
[_{VP} Chi canting], wo hui xuan Kaiyue.
eat restaurant I will choose Kaiyue
Intended ⇒ ‘As for having meals in a restaurant, I will choose Kaiyue Restaurant.’

Granted Cheng and Vicente’s lexical identity effects, it follows that AT VP (Type II) might involve a copying process, which can be thought of as movement. Nevertheless, a puzzle is why two verbs in (40) are able to take two different objects NP: That is, only the ‘verb’ is copied and internally merged to a high position. If (40) is analyzed on a par with

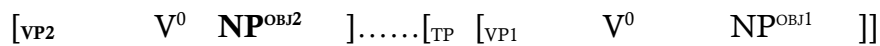
verb doubling, as visualized in (42): suppose that V^0 is copied and internally merged to a higher position, and this new copy merges with NP^{OBJ2} to form a new VP (VP_2). This derivation is problematic in two regards. First, V^0 forms a constituent with NP^{OBJ1} , and it is not clear how a copying mechanism targets a non-constituent like V^0 without copying the whole VP. Second, if one assumes that NP^{OBJ2} is merged with the moved V^0 to form a VP or to be labelled with VP, as in (42)b, this operation suffers the burden of proof.

(42) Hypothetical derivation of (40)

a. Copy and Move



b. Hypothetical Insertion of NP^{OBJ2}



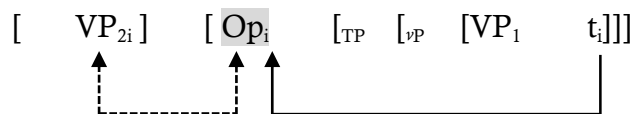
It is worth taking a moment to discuss some apparent counterexamples here. To begin, although we have \bar{A} -evidence showing that VP AT (Type II) is the \bar{A} -extracted constituent (See Section 2.2.1 and 2.2.2). As pointed out in Landau (2006), \bar{A} -properties surrounding VP fronting can be explained by assuming the existence of Op that links a low VP to a high VP. However, following the line of this pursuit, a legitimate worry to raise at the point is whether VP AT (Type III) in (41) can be analyzed as involving the operator movement, as depicted in (43), where VP_2 is base-generated in a high position and is linked to VP^1 by the Op moving from the domain of VP^1 . Landau indicates that the robust evidence in favor of (43) in the case of VP fronting is a scenario where there is a lexical mismatch between two VPs. Examples from two languages in (44)a-b illustrate Landau's point. Cable (2004) claims that island sensitivity is also observed in (44)a-b, which seemingly lends support to the operator-movement analysis (43).³⁵

³⁵ It should be noticed that Cable (2004) is not explicit in proposing how the Yiddish and Brazilian Portuguese examples (44)a-b are derived but points out that they are the apparent cases that a movement approach fails to account for, as he puts:

'...(A)lthough I imagine someone could work out such an account (=the movement account), I am not clever enough to attempt it.' (p.10).

This paradox is due to the fact that in (44)a-b, the high verb is lexically different from the low one, which seems to suggest the base-generation approach. However, an immediate question is how the two verbs are semantically related, given the base-generation approach. Landau (2006) reinterprets Cable's paradox and presents a similar scenario, as in (43), where movement of the operator is a way of linking two lexically different verbs. Again, the problem is the lack of robust evidence for the scenario.

(43) Op movement analysis of (41)



(44) VP fronting in Yiddish and Brazilian Portuguese

a. Yiddish

Forn kayn amerike bin ikh gefloygn
to-travel to America am I flown
keyn nyu-york.
to New York

‘As for traveling to America, I have flown to New York.’

(Cable, 2004, p.9, ex. 16a)

b. Brazilian Portuguese

Comer peixe, a Maria acha que eu
to-eat fish Mary thinks that I
como samáo.
eat salmon

‘As for eating fish, Mary thinks I eat salmon.’

(Cable, 2004, p.11, ex. 21a)

Nevertheless, there is ample reason to argue that VP AT (Type II) in (40), cannot be analyzed on a par with (43). First, the operator movement analysis fails to explain why two VPs have to contain the identical lexical verbs but different objects. Second, following Cheng and Vicente’s analysis of verb doubling, two verbs bearing the same lexical directly can be interpreted as showing that one of the verbs is copied from the other in overt syntax. Third, as indicated by Landau (2006), the operator movement analysis itself bears the burden of proof. It remains a piece of the jigsaw how to verify the analysis in (43).

In this section, I have shown that VP AT (Type II) obligatorily enforces lexical identity effects, which are taken to indicate that the sentence-initial VP AT is a copy of another VP in the host clause. Meanwhile, it is not clear why two VPs in AT (Type II) are able to take two different NP objects.

2.2.5 Summary

Table 1 offers a summary of the discussion in Section 2.2, and confirms the view that

NP AT (Type I) and VP AT (Type II) involves extraction, while VP AT (Type III) does not. The line of argumentation that NP AT (Type I) and VP AT (Type II) are extracted constituents might counter one’s intuition because there is no apparent gap created via extraction on the surface. Under the proposed analysis in Chapter 3, ‘gapless structures’ merely represent a mismatch between syntactic structure and its Spell-out structure at PF. In Section 2.3, I discuss the distribution of AT in the CP layer and the TP layer, with the aim of pinning down the designated position of AT, if there is, and investigating whether AT, endowed with discourse-oriented functions, exhibit root properties..

Table 1. The summary of Section 2.2

| Types of AT | NP AT (Type I) | VP AT (Type II) | VP AT (Type III) |
|--|----------------|-----------------|------------------|
| Evidence for movement | | | |
| Complex NP island constraint [See (25) and (26)] | ✓ | ✓ | X |
| Sentential subject island constraint [See (30)] | ✓ | ✓ | X |
| The licensing of parasitic gaps [See Section 2.2.2] | ✓ | ✓ | X |
| A-movement [See Section 2.2.3] | ✓ | ✓ | ✓ |
| Lexical identity effects [Section 2.2.4] | Inapplicable | ✓ | X |

2.3 The topography of AT

In this section, I will illustrate the distribution of AT in the CP layer and the TP layer in relation to the distribution of adverbs and modals in Mandarin. On a side note, it has been the established fact in Mandarin that the surface subject in the canonical word order SVO is not necessarily located in the canonical subject position, [Spec, TP], though it is in the sentence-initial position on the surface. One of the properties related to the subject, for instance, is the specificity restriction, as evidenced by the fact that Mandarin does not allow the indefinite subject unless it is licensed by the existential predicate/modal *you* ‘have/exit’ (See Li 1999; Tsai 2001; Yang 2005, among others), as shown in (45).

(45) The non-specific/specific subject

- a. *Wu-ge ren lai-le.
five-CL person come-ASP

Intended \Rightarrow ‘Five persons came.’

b. You wu-ge ren lai-le.

have five-CL person come-ASP

i. ‘There are five persons coming.’ [\approx Specific reading]

ii. ‘Three persons came.’ [\approx Non-specific reading]

Besides, the subject in Mandarin can be a topic itself. To account for topic-prominence in Mandarin, it is moved in Tsai (2015a, 2015b) that obligatory topicalization in Mandarin is triggered due to the check-off of a peripheral feature hosted on Top^0 . Take a Mandarin the outer affective construction in (46)a for example. Tsai maintains that when the D(efiniteness)-operator merges to the subject *Zhangsan*, the subject obligatorily raises to [Spec, TopP] to check off the peripheral feature, as instantiated in (46)b.³⁶

(46) The outer affective and obligatory topicalization in Mandarin

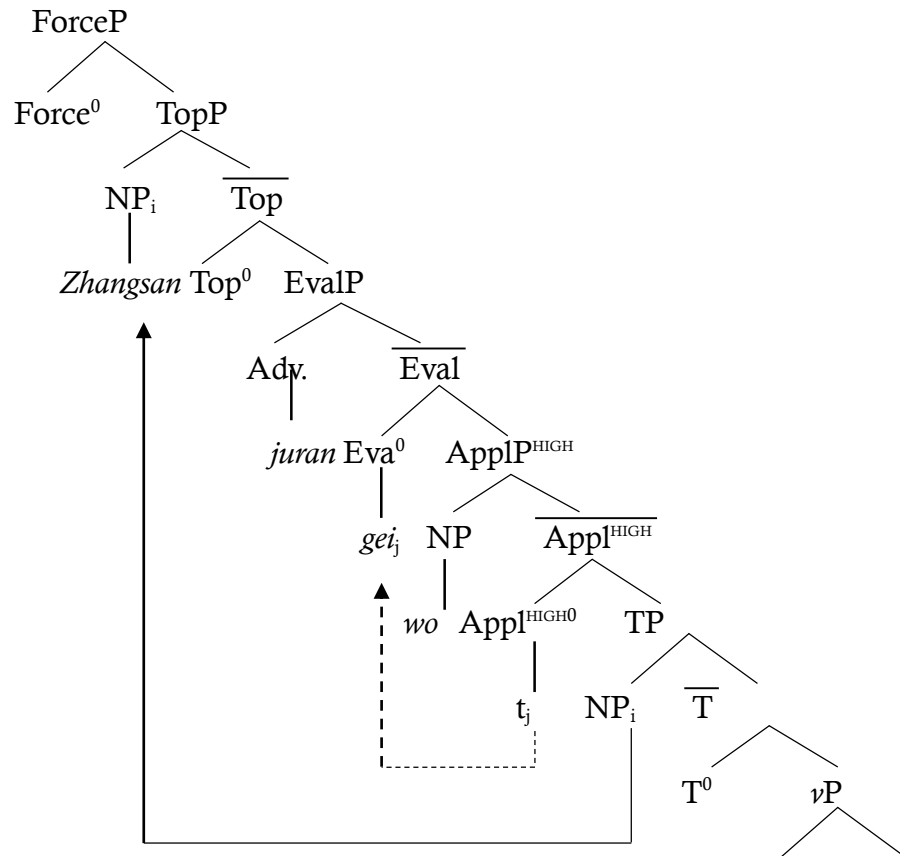
a. Zhangsan_{D-op} **jurán** [gei-wo] he-le san-ping jiu!

Zhangsan unexpectedly AFF-me drink-ASP three-CL wine

‘Unexpectedly, Zhangsan drank three bottles of wine on me!’

³⁶ Tsai (2015a, 2015b) argues that the outer affective construal in Mandarin in (46)b, encoding exclamation with the presence of the evaluative adverb *jurán* ‘unexpectedly’, which expresses unexpectedness, is derived through a head-to-head agreement between Force^0 and Eval^0 in (46)b. This derivation shows that the presence of the evaluative adverb, say *jurán* ‘unexpectedly’, is not sufficient to encode the sentence in (46)a with an illocutionary force; instead, it must inherit the illocutionary force from ForceP, and thus the sentence can be clausally typed into an exclamatory sentence.

b.



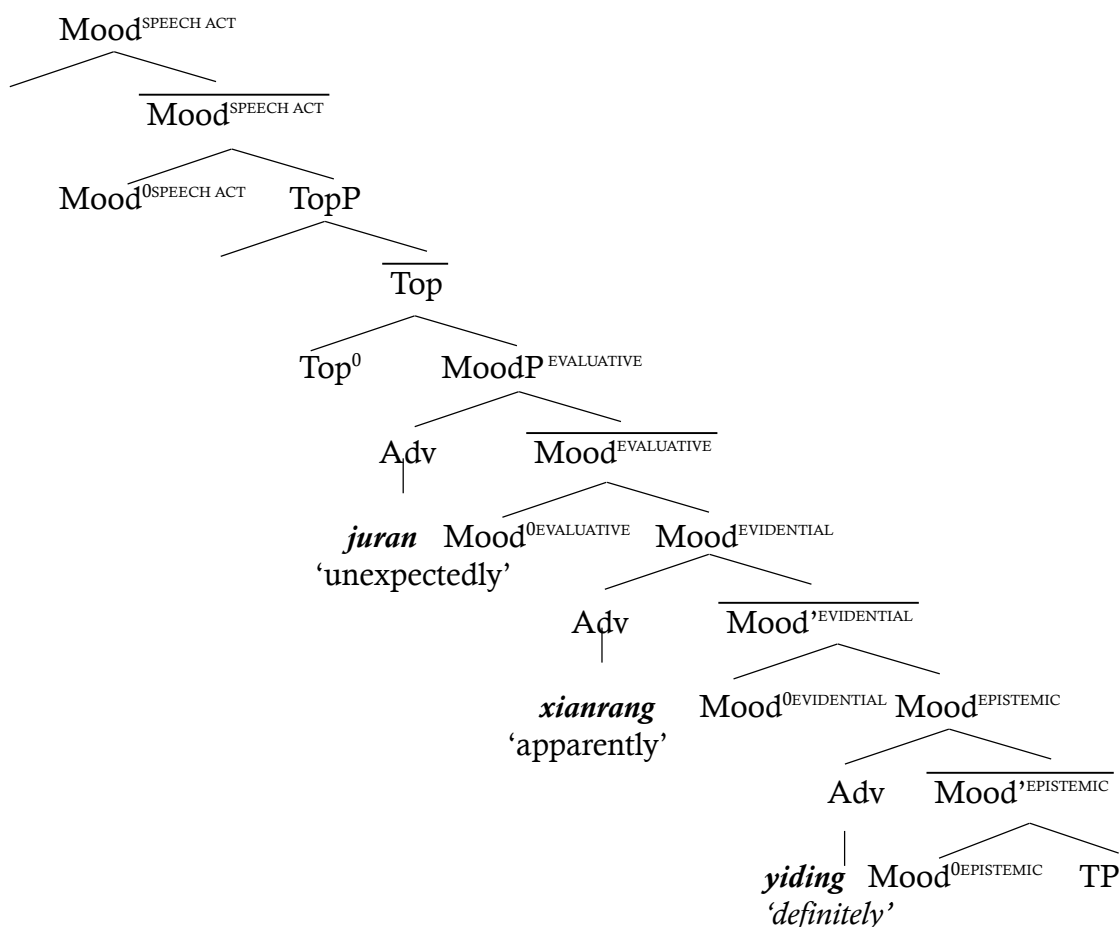
As (46)b has shown, the subject cannot be treated as an indication of demarcating the CP-TP boundary. In this view, the distribution of adverbs and modals in Mandarin are employed to diagnose the distribution of AT.

2.3.1 The CP layer

To begin with, following Cinque's view on adverbial projections and Tsai's (2015a, 2015b) proposed analysis of TopP in the left periphery of CP, as visualized in (47), I assume that adverbs in Mandarin have their designated positions in the CP domain (Also see Ernst 2014).³⁷ In the following discussion, I will show the distribution of AT with respect to the distribution of adverbs.

³⁷ In light of the universal hierarchy of Adv(erbial)P(hrase)s, Cinque (1999) proposes that there is a systematic one-to-one correspondence of the hierarchies of adverbs and clausal functional heads, and each sub-type of adverbial phrase occupies the specifier position of a different functional projection, whose head instantiates a notion corresponding to the meaning of the given adverbial phrase.

(47) The hierarchy of adverbs in the CP of Mandarin



Given the fixed order of adverbs and TopP in (47), let us diagnose whether AT can be recursive between these CP-level adverbs. As shown in (48)a-d, (49) a-d and (50) a-d, it is concluded that the three types of AT are able to occur in the position above TopP, and between MoodP^{EVALUATIVE}, MoodP^{EVIDENTIAL}, and MoodP^{EVIDENTIAL}. It is observed that AT is able to occur before or after AdvP^{EVALUATIVE}, AdvP^{EVIDENTIAL} and AdvP^{EVIDENTIAL}. A word of clarification is that though AT is able to occur right after Mood^{EVALUATIVE}, Mood^{EVIDENTIAL}, and Mood^{EPISTEMIC}, this cannot be taken to show that AT is located in the CP layer, as there is much evidence showing that TP has an articulated structure, which is about to be discussed in the next section.

(48) NP AT (Type I) in the CP layer

- a. AT > TopP > AdvP^{EVALUATIVE} > TP

| | | | | | |
|-----|-------------------------|---------------------------|--|---------|----------|
| [NP | Shuigo] _{AT} , | [Zhangsan] _{TOP} | [juran] _{Adv} ^{EVAL} | chi-le | pingguo. |
| | fruit | Zhangsan | unexpectedly | eat-ASP | apple |

‘As for fruits, unexpectedly, Zhangsan ate apples.’

- b. TopP > **AT** > AdvP^{EVALUATIVE} > TP or TopP > AdvP^{EVALUATIVE} > **AT** > TP
 [Zhangsan]_{TOP}, ([NP shuiguo]_{AT}), [juran]_{Adv}^{EVAL} ([NP shuiguo]_{AT}) chi-le pingguo.
 Zhangsan fruit unexpectedly fruit eat-ASP apple
 ‘(As for fruits), unexpectedly, (as for fruits), Zhangsan ate apples.’
- c. TopP > **AT** > AdvP^{EVIDENTIAL} > TP or TopP > AdvP^{EVIDENTIAL} > **AT** > TP
 [Zhangsan]_{TOP}, ([NP shuiguo]_{AT}), [xianrang]_{Adv}^{EVI} ([NP shuiguo]_{AT}) xihuan
 Zhangsan fruit apparently fruit like
 chi pingguo.
 eat apple
 ‘(As for fruits), apparently, (as for fruits), Zhangsan likes to eat apples.’
- d. TopP > **AT** > AdvP^{EPISTEMIC} > TP or TopP > AdvP^{EPISTEMIC} > **AT** > TP
 [Zhangsan]_{TOP}, ([NP shuiguo]_{AT}), [dagai]_{Adv}^{EVI} ([NP shuiguo]_{AT})
 Zhangsan fruit probably fruit
 xihuan chi pingguo.
 like eat apple
 ‘(As for fruits), probably, (as for fruits), Zhangsan likes to eat apples.’

(49) VP AT (Type II) in the CP layer

- a. **AT** > TopP > AdvP^{EVALUATIVE} > TP
 [VP Chi shuiguo]_{AT}, [Zhangsan]_{TOP} [juran]_{Adv}^{EVAL} zhi chi pingguo.
 eat fruit Zhangsan unexpectedly only eat apple
 ‘As for eating fruits, unexpectedly, Zhangsan only eat apples.’
- b. TopP > **AT** > AdvP^{EVALUATIVE} > TP or TopP > AdvP^{EVALUATIVE} > **AT** > TP
 [Zhangsan]_{TOP}, ([VP chi shuiguo]_{AT}), [juran]_{Adv}^{EVAL} ([VP chi shuiguo]_{AT})
 Zhangsan eat fruit unexpectedly eat fruit
 zhi chi pingguo, (qita dou bu chi).
 only eat apple others all NEG eat
 ‘(As for eating fruits), unexpectedly, (as for eating fruits), Zhangsan only eats apples, (and does not eat other kinds of fruit).’
- c. TopP > **AT** > AdvP^{EVIDENTIAL} > TP or TopP > AdvP^{EVIDENTIAL} > **AT** > TP
 [Zhangsan]_{TOP}, ([VP chi shuiguo]_{AT}), [xianrang]_{Adv}^{EVI} ([VP chi shuiguo]_{AT})
 Zhangsan eat fruit apparently eat fruit
 xihuan chi pingguo.

like eat apple

‘(As for eating fruits), apparently, (as for eating fruits), Zhangsan likes to eat apples.

- d. TopP > **AT** > AdvP^{EPISTEMIC} > TP or *TopP > AdvP^{EPISTEMIC} > **AT** > TP

[Zhangsan]_{TOP}, ([VP chi shuiguo]_{AT}), [dagai]_{Adv}^{EVI} ([VP chi shuiguo]_{AT})

Zhangsan eat fruit probably eat fruit

xihuan chi pingguo.

like eat apple

‘(As for eating fruits), probably, (as for eating fruits), Zhangsan likes to eat apples.

(50) VP AT (Type III) in the CP layer

- a. **AT** > TopP > AdvP^{EVALUATIVE} > TP

[VP Zuo yundong]_{AT}, [Zhangsan]_{TOP} [juran]_{Adv}^{EVAL} xuan-da
do exercise Zhangsan unexpectedly choose-play

paiqiu.

volleyball

‘As for doing exercise, unexpectedly, Zhangsan chooses to play volleyball.

(suppose that he hates playing volleyball.)’

- b. TopP > **AT** > AdvP^{EVALUATIVE} > TP or TopP > AdvP^{EVALUATIVE} > **AT** > TP

[Zhangsan]_{TOP} ([VP zuo yundong]_{AT}), [juran]_{Adv}^{EVAL} ([VP zuo yundong]_{AT})

Zhangsan do exercise unexpectedly play exercise

zhi xiang da paiqiu, (zheyang ta hai xiang jianfei)!

only want play volleyball this way he still want diet

‘(As for doing exercise), unexpectedly, (as for doing exercise), Zhangsan only

wants to play volleyball, and then how come he still wants to lose some weight!’

- c. TopP > **AT** > AdvP^{EVIDENTIAL} > TP or TopP > AdvP^{EVIDENTIAL} > **AT** > TP

[Zhangsan]_{TOP} ([VP zuo yundong]_{AT}), [xianran]_{Adv}^{EVAL} ([VP zuo

Zhangsan do exercise apparently play

yundong]_{AT}) hui xuan da paiqiu.

exercise will choose play volleyball

‘(As for doing exercise), apparently, (as for doing exercise), Zhangsan will choose

to play volleyball (because he used to join the school volleyball team).’

- d. TopP > **AT** > AdvP^{EPISTEMIC} > TP or TopP > AdvP^{EPISTEMIC} > **AT** > TP

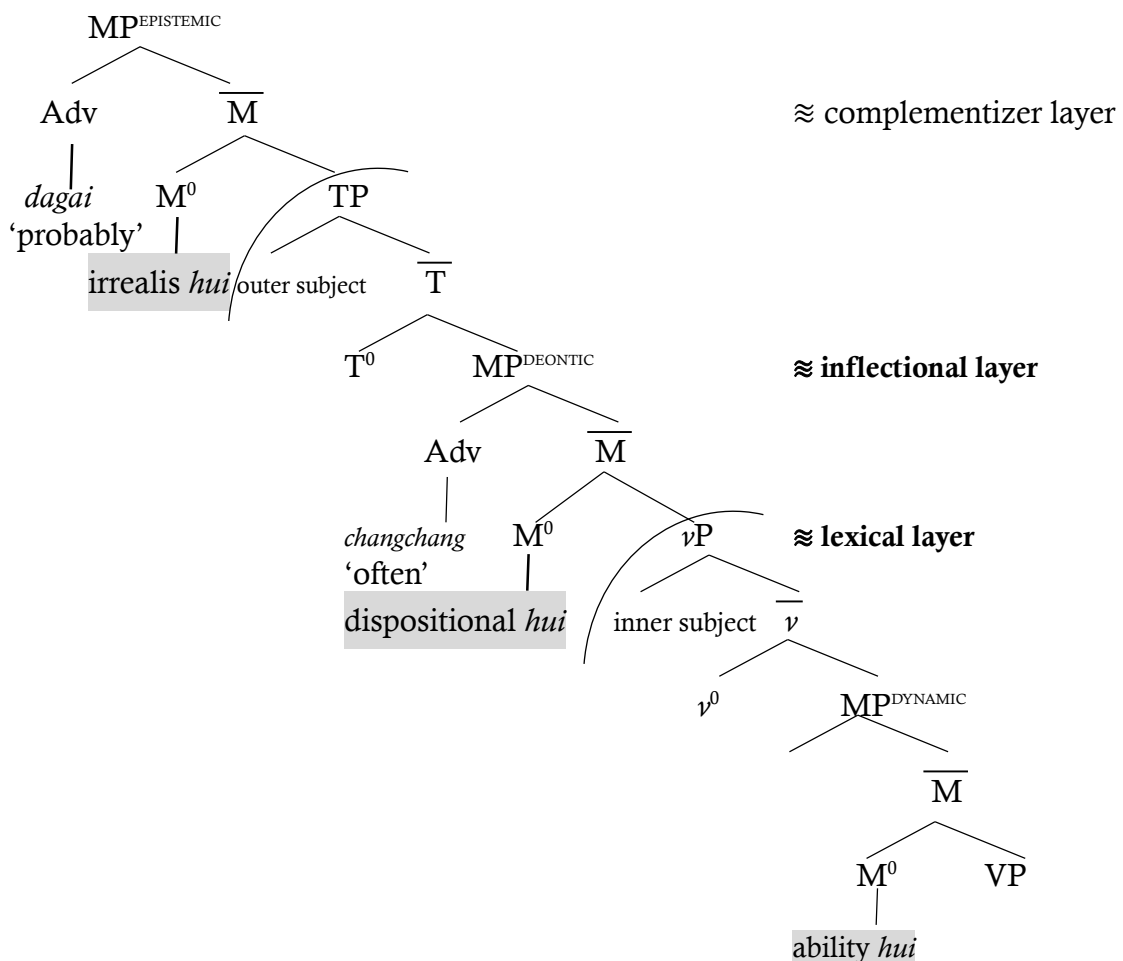
[Zhangsan]_{TOP} ([VP zuo yundong]_{AT}), [daqai]_{Adv}^{EVI} ([VP zuo

Zhangsan do exercise probably do
 yundong]_{AT}) hui xuan da paiqiu.
 exercise will choose play volleyball
 ‘(As for doing exercise), probably, (as for doing exercise), Zhangsan is disposed
 to choose to play volleyball (because he used to join the school volleyball team).’

2.3.2 The TP layer

Tsai (2015c) proposes the topography of Mandarin modals, as depicted in (51), where various types of *hui* is merged in different positions and encode the syntax-semantic correspondence aligned with the three tiers of syntactic projection. In this section, I will study the distribution of AT with respect to the position of *hui* in the TP layer and see whether AT is allowed within ν P. It is also noted that each type of *hui* can be accompanied by its corresponding adverb, as exemplified in (52).

(51) The hierarchy of modals in Mandarin (Tsai 2015c)



(52) The interpretations of *hui* with respect to its height

- a. Akiu dagai (hui^{EPISTEMIC}) bixu yao^{DEONTIC} hui^{ABILITY} kaiche.
 Akiu probably HUI obligatorily YAO HUI drive
 'Akiu probably will have to be able to drive.'
- b. Waijiaoguan changchang hui^{DEONTIC} lai zheli.
 diplomat often tend.to come here
 'Diplomats often tend to come here.'

As illustrated from (53), (54) and (55), it is concluded that the three types of AT is able to occur in several positions in the TP layer but not below MP^{DEONTIC}. (53)b, (54)b and (55)b show that the lowest position where AT can occur cannot be lower than MP^{DEONTIC}. This cutting line can be supported by the fact in (53)d, (54)d and (55)d, where the ability reading of *hui* is absent even when AT is placed in between ν P and VP. This conclusion fares well with the wide distribution of AT in the CP layer.³⁸

(53) NP AT (Type I) in the TP layer

- a. TopP > MP^{EPISTEMIC} > **AT** > MP^{DEONTIC} > VP
 Zhangsan dagai [NP shuiguoguo]_{AT} changchang zhi chi pingguo.
 Zhangsan probably fruit often only eat apple
 'Probably, Zhangsan, as for fruits, often eats apples only.'
- b. *TopP > MP^{DEONTIC} > **AT** > VP
 Zhangsan changchang hui^{DEONTIC} [NP shuiguoguo]_{AT} zhi chi pingguo.
 Zhangsan often can fruit only eat apple
 'Zhangsan is often disposed to, as for fruits, eat apples only.'

³⁸ It is observed that AT cannot occur between MP^{DEONTIC} and ν P. If MP^{DEONTIC} is considered to be another extended functional projection in the left periphery of ν P, it is not clear why AT cannot occur in-between. I suggest that there might some independent reason for the affinity between MP^{DEONTIC} and ν P. Tsai (2001, 2010) argues that MP^{DEONTIC} serves as the extended nuclear scope (\exists -closure). For example, the fact that the variable left by the indefinite subject *sange ren* 'three persons' at [Spec, ν P] can be properly bound is due to the *chi* verb moving from ν^0 to Mod⁰, which extends the nuclear scope (ν P) in the sense of Diesing (1992) to MP^{DEONTIC}. As visualized in (ii), the variable (*x*) can be bound within the extended nuclear scope.

- (i) san-ge ren chi-de-wan jiu-wan-fan
 three-CL people eat-DE-finish nine-CL-rice
 'Three persons should eat up nine bowls of rice.'
- (ii) [TP [DP san-ge ren]] [T⁰ [MP^{DEONTIC} [chi_k-de-wan [νP [DP san-ge ren (x)] [ν⁰ t_k VP]]]]]]
- \exists -closure**

c. MP^{EPISTEMIC} > TP > AT > MP^{DEONTIC} > VP

Dagai Zhangsan [NP shuiguo]_{AT} bu hui^{DEONTIC} zhi chi pingguo.
 probably Zhangsan fruit NEG can only eat apple
 ‘Probably, Zhangsan, as for fruits, is not disposed to eat apples only, (he might eat oranges.)’

d. *TopP > MP^{DEONTIC} > MP^{DYNAMIC} > AT > VP

Zhangsan changchang hui^{DYNAMIC} [NP shuiguo]_{AT} zhi chi pingguo
 Zhangsan often can fruit only eat apple

Intended ⇒ ‘Zhangsan is often able to, as for fruits, eat apples only.’

(54) VP AT (Type II) in the TP layer

a. TopP > MP^{EPISTEMIC} > AT > MP^{DEONTIC} > VP

Zhangsan dagai [VP chi shuiguo]_{AT} changchang zhi chi pingguo.
 Zhangsan probably eat fruit often only eat apple
 ‘Probably, Zhangsan, as for fruits, often eats apples only.’

b. *TopP > MP^{DEONTIC} > AT > VP

Zhangsan changchang hui^{DEONTIC} [VP chi shuiguo]_{AT} zhi chi pingguo
 Zhangsan often can eat fruit only eat apple
 ‘Zhangsan is often, as for fruits, disposed to eat apples only.’

c. MP^{EPISTEMIC} > TP > AT > MP^{DEONTIC} > VP

Dagai Zhangsan [VP chi shuiguo]_{AT} bu hui zhi chi pingguo.
 probably Zhangsan eat fruit NEG can only eat apple
 ‘Probably, Zhangsan, as for fruits, is not disposed to eat apples only, (he might eat oranges.)’

d. *TopP > MP^{DEONTIC} > MP^{DYNAMIC} > AT > VP

Zhangsan changchang hui^{DYNAMIC} [VP chi shuiguo]_{AT} zhi chi pingguo
 Zhangsan often able to eat fruit only eat apple

Intended ⇒ ‘Zhangsan is often able to, for as fruits, eat apples only.’

(55) VP AT (Type III) in the TP domain

a. TopP > MP^{EPISTEMIC} > AT > MP^{DEONTIC} > VP

?Zhangsan dagai [VP da feiji]_{AT} changchang hui zhi xuan
 Zhangsan probably take airplane often can only choose

Huahang.

China Airlines

‘Probably, Zhangsan, as for taking the airplane, is often disposed to choose China Airlines only.’

- b. *TopP > MP^{DEONTIC} > AT > VP

Zhangsan changchang hui^{DEONTIC} [VP zuo yundong]_{AT} zhi xuan
Zhangsan often can do exercise only choose
da paiqiu.
play volleyball

‘Zhangsan is often disposed to, as for doing exercise, only choose to play volleyball.’

- c. MP^{EPISTEMIC} > TP > AT > MP^{DEONTIC} > VP

Dagai Zhangsan [VP zuo yundong]_{AT} changchang hui^{DEONTIC}
probably Zhangsan do exercise often can
xuan da paiqiu.
choose play volleyball

‘It is probable that Zhangsan, as for doing exercise, is often disposed to choose to play volleyball.’

- d. *TopP > MP^{DEONTIC} > MP^{DYNAMIC} > AT > VP

Zhangsan changchang hui^{DYNAMIC} [VP zuo yundong]_{AT} xuan
Zhangsan often can do exercise choose
da paiqiu.
play volleyball

Intended ⇒ ‘Zhangsan is often able to, as for doing exercise, choose to play volleyball.’

The distribution of AT in the CP layer and the TP layer seems to indicate that AT does not have a designated position but it cannot be lower than *v*P, evidenced by the fact that it cannot occur right after the dynamic use of *hui* as well as the deontic use. In the following sub-sections, despite there being no designated position for AT in the CP layer and the TP layer, one apparent restriction is that AT has to precede the focus.

2.3.3 Aboutness Topic-Focus dependency across two layers

As introduced in Section 2.1, the presence of AT is always accompanied by a focused constituent in the host clause, giving rise to a AT-focus dependency, as visualized in (56)a³⁹, where the discursual function of AT is to evoke a contextually available set of alternatives and the focused YP is one of the alternatives included in the set. Nevertheless, the reverse order in (56)b does not hold.

(56) AT-focus dependency

- a. [XP]_{AT}..... [YP]_{FOC}
 b. *[YP]_{FOC}..... [XP]_{AT}

Interestingly enough, the dependency can be sustained even though it takes place across two layers. As shown in (57)a, NP AT (Type I) in the CP layer is able to maintain the dependency with the focused NP in the VP domain. In (57)b, the postverbal NP can undergo focus movement to the TP-internal position (Shyu 1995, 2001), though NP AT (Type I) is situated in the CP layer. Following Tang's (2001) analysis that *yijing* is a TP-level adverb, we can see in (57)c that NP AT (Type I) and the focused NP are located in the TP layer together. The co-occurrence of AT with the focused NP in the CP layer is also allowable, as evident in (57)d.

(57) Co-occurrence of NP AT (Type I) with the focused NP

- a. TopicP > AT > Adv^{EVALUATIVE} > VP > Focus
 [Zhangsan] [kefei]_{AT} juran^{EVALUATIVE} xihuan he [kabujinuo]_{FOC}.
 Zhangsan coffee unexpectedly like drink cappuccino
 'Unexpectedly, Zhangsan, as for coffee, likes to drink cappuccino!'
- b. TopicP > AT > Adv^{ESPISTEMIC} > TP > *lian*-Focus > Mod^{DYNAMIC} > VP
 [Zhangsan] [kefei]_{AT} xianran^{EPISTEMIC} lian-[kabujinuo]_{FOC} dou bu
 Zhangsan coffee obviously even-black coffee all NEG
 gan he.
 dare drink
 'Obviously, Zhangsan, as for coffee, even cappuccino, dare not drink it.'

³⁹ Interpreted another way, the AT-focus dependency can be regarded as the ordering restriction.

- c. TopicP > TP > Adv^{already} > AT > *lian*-Focus > Mod^{DYNAMIC} > VP
 [Zhangsan] yijing [kefei]_{AT} lian-[kabujinuo]_{FOC} dou bu neng
 Zhangsan already coffee even-cappuccino all NEG able
 he le.
 drink SFP
 ‘Zhangsan, as for coffee, even cappuccino, is already unable to drink it’
- d. TopicP > AT > *lian*-Focus > Adv^{EPISTEMIC} > TP > Mod^{DYNAMIC} > VP
 [Zhangsan] [kefei]_{AT} lian-[kabujinuo]_{FOC} xiaran^{EPISTEMIC} dou bu gan
 Zhangsan coffee even- cappuccino obviously all NEG dare
 he.
 drink
 ‘Obviously, Zhangsan, as for coffee, even cappuccino, dare not drink it.’

(58) Co-occurrence of VP AT (Type II) with the focused NP

- a. Topic > AT > Adv^{EVALUATIVE} > VP > Focus
 [Zhangsan] [he kefei]_{AT} juran^{EVALUATIVE} xihuan he
 Zhangsan drink coffee unexpectedly like drink
 [kabujinuo]_{FOC}.
 cappuccino
 ‘Unexpectedly, Zhangsan, as for drinking coffee, likes to drink cappuccino!’
- b. Topic > AT > Adv^{EPISTEMIC} > TP > *lian*-Focus > Mod-*gan*^{DYNAMIC} > VP
 [Zhangsan] [he kafei]_{AT} xianran^{EPISTEMIC} lian-[kabujinuo]_{FOC}
 Zhangsan drink coffee obviously even- cappuccino
 dou bu gan he.
 all NEG dare drink
 ‘Obviously, Zhangsan, as for drinking coffee, even cappuccino, does not dare drink it.’
- c. Topic > TP > Adv^{already} > AT > *lian*-Focus > Mod-*neng*^{DYNAMIC} > VP
 ?[Zhangsan] yijing [he kefei]_{AT} lian-[kabujinuo]_{FOC} dou bu
 Zhangsan already drink coffee even-cappuccino all NEG
 neng he le.
 able drink SFP
 ‘Zhangsan, as for drinking coffee, even cappuccino, is already unable to drink it,

(because he has some diabetes complications)'

- d. Topic > AT > *lian*-Focus > Adv^{EPISTEMIC} > TP > Mod-*gan*^{DYNAMIC}>VP
 [Zhangsan] (ah) [he kefei]_{AT} *lian*-[kabujinuo]_{FOC} *xiaran*^{EPISTEMIC} dou
 Zhangsan TOP drink coffee even- cappuccino obviously all
 bu gan he
 NEG dare drink
 'Obviously, Zhangsan, as for coffee, even cappuccino, dare not drink it.'

(59) Co-occurrence of VP AT (Type III) with the focused NP

- a. Topic > AT > Adv^{EVALUATIVE} > VP > Focus
 [Zhangsan] [zuo yundong]_{AT} *jurán*^{EVALUATIVE} xihuan da
 Zhangsan do exercise unexpectedly like drink
 [paiqiu]_{FOC}.
 volleyball
 'Unexpectedly, Zhangsan, as for doing exercise, likes to play volleyball.'
- b. Topic > AT > Adv^{EPISTEMIC} > TP > *lian*- Focus > Mod-*hui*^{DYNAMIC}>VP
 [Zhangsan] [zuo yundong]_{AT} *xianran*^{EPISTEMIC} *lian*-[paiqiu]_{FOC}
 Zhangsan drink exercise obviously even- volleyball
 dou bu hui da.
 all NEG able play
 'Obviously, Zhangsan, as for doing exercise, even volleyball, is unable to play it.'
- c. Topic > TP > Adv^{already} > AT > *lian*- Focus > Mod-*hui*^{DYNAMIC}>VP
 ?[Zhangsan] yijing [zuo yundong]_{AT} *lian*-[paiqiu]_{FOC} dou bu
 Zhangsan already do exercise even-volleyball all NEG
 hui da le.
 able play SFP
 'Zhangsan, as for doing exercise, even volleyball, is already unable to play it (because he is too old to play it).'
- d. Topic > AT > *lian*- Focus > Adv^{EPISTEMIC} > TP > Mod-*hui*^{DYNAMIC}>VP
 [Zhangsan] (ah) [zuo yundong]_{AT} *lian*-[paiqiu]_{FOC} *xianran*^{EPISTEMIC}
 Zhangsan TOP do exercise even-volleyball obviously
 dou bu hui da.

all NEG able play

‘Obviously, Zhangsan, as for doing exercise, even volleyball, is unable to play it.’

The dependency in (57)a-d also holds for VP AT (Type II) in (58) and VP AT (Type III) in (59). As will become clear in Chapter 3, the dependency suggests that if there are two strong features, say the [Topic]-feature and the [Focus]-feature, have to be checked and spelt out differently at PF. Then, the left periphery of CP and ν P, allowing the merge of TopP and FocusP, entertains the possibility that the [Topic]-feature and the [Focus]-feature can be checked within both CP and TP. I will detail the dependency in Chapter 3.

2.3.4 Main clause phenomena

Since [Emonds \(1970\)](#), English left dislocation and topicalization have been regarded as a syntactic manifestation of root properties; namely, they are only allowed to occur in root clauses or a subset of root-like clauses. A series of [Haegeman’s \(2006a, 2010, 2011, 2012a, 2012b\)](#) works have shown that the left peripheral structure of subordinate clauses is different from that of root clauses/matrix clauses. In the following sub-sections, I show that AT is able to occur in a variety of adverbial clauses and clausal complements. This amounts to showing that AT is not considered to be a representation of the MCP/root properties.

2.3.4.1 Adverbial clauses

To explain the non-availability of argument fronting and high adverbs in adverbial clauses, [Haegeman](#) in her series of papers argues that adverbial clauses have a truncated/reduced functional structure, as in (60)b, compared with fully-fledged functional structures in (60)a. The truncated structure in (60)b makes the following predictions: (i.) argument fronting (topicalization) would not be possible in the absence of TopP, and (ii.) speaker-related modal expressions are not licensed because of the absence of ForceP, which is responsible for the encoding of the speaker’s attitudes, speech act, and so on.

(60) The clausal structure of the left periphery

a. Fully-fledged left-peripheral structure

(Sub)⁴⁰ Top* Focus Force Fin IP

b. Reduced/Truncated left-peripheral structure

Sub Fin IP

As shown from (61) to (64), the three types of AT are allowed to occur in the left peripheral position of various adverbial clauses.⁴¹

(61) Conditional clauses

a. NP AT (Type I)

Ruguo [NP shucai]_{AT} Xiaomei mei chi-wan qiezi
if vegetable Xiaomei NEG eat-finish eggplant
dehua, ta mama jiu hui da ta.
then POSSmother then will hit her

Intended ⇒ ‘If, as for vegetables, Xiaomei did not finish eating eggplants, her mother will punish her.’

b. VP AT (Type II)

Ruguo [VP chi shucai]_{AT} (ah),Xiaomei mei chi-wan qiezi
if eat vegetable TOP Xiaomei NEG eat-finish eggplant
dehua, ta mama jiu hui da ta.
then POSSmother then will hit her

Intended ⇒ ‘If, as for eating vegetables, Xiaomei did not finish eating eggplants, her mother will punish her.’

c. VP AT (Type III)

Ruguo [VP chuguo nianshu]_{AT} Zhangsan neng jinru MIT
if abroad study Zhangsan able enter MIT
dehua, tade jiaren hui hen kaixin.
then hi family will very happy

Intended ⇒ ‘If, as for studying abroad, Zhangsan is able to get admitted to MIT,

⁴⁰ Subordinate clauses

⁴¹ Admittedly, some of the examples from (61) to (64) might sound slightly awkward for some unknown, especially those marked with “?”. There is a need to further investigate the internal makeup of these adverbial clauses. I leave it aside for the time being. I am grateful to Iris Wu for sharing her judgement with me.

his family will be happy for him.'

(62) Concessive clauses

a. NP AT (Type I)

??Suiran [NP shucai]_{AT} Zhangsan taoyan chi qiezi, ta haishi
although fruit Zhangsan hate eat eggplant he still
qiangpo ta-jizi chi yidian.
force him-self eat a little

Intended ⇒ 'Although, as for vegetables, Zhangsan hates eating eggplants, he still forces himself to eat few of them.'

b. VP AT (Type II)

?Suiran [VP chi shucai]_{AT} (ah) Zhangsan taoyan chi qiezi, ta
although eat fruit TOP Zhangsan hate eat eggplant he
haishi qiangpo ta-jizi chi yidian.
still force him-self eat a little

Intended ⇒ 'Although, as for eating vegetables, Zhangsan hates eating eggplants, he still forces himself to eat few of them.'

c. VP AT (Type III)

?Suiran [VP chuguo nianshu]_{AT} Zhangsan hui xuan MIT,
although abroad study Zhangsan will choose MIT
tade baba hashi xiwang ta kaolu: USC.
his father still hope he consider USC

Intended ⇒ 'Although, as for studying abroad, Zhangsan will choose MIT, his father hopes that he can consider USC.'

(63) Causal clauses

a. NP AT (Type I)

Yinwei [NP shucai]_{AT} Zhangsan zhi chi qiezi, mama
because vegetable Zhangsan only eat eggplant mother
zhihao bu zhu qita-de cai
however NEG cook other-MOD vegetable

Intended ⇒ 'Because, as for vegetables, Zhangsan eat only eggplants, his mother does not cook anything but eggplants.'

b. VP AT (Type II)

Yinwei [VP chi shucai]_{AT} Zhangsan zhi chi qiezi, mama
 because eat vegetable Zhangsan only eat eggplant mother
 zhihao bu zhu qita-de cai.
 only NEG cook other-MOD vegetable

Intended ⇒ ‘Because, as for eating vegetables, Zhangsan only eat eggplants, his mother does not cook anything but eggplants.’

c. VP AT (Type III)

Yinwei [VP chuguo nianshu]_{AT} Zhangsan zhi hui xuan
 because abroad study Zhangsan only will choose
 Aidinbao, ta bixu duo zhuan dian qian.
 Edinburg he must much earn point money

Intended ⇒ ‘Because, as for studying abroad, Zhangsan will only choose *the University of Edinburgh*, he must earn more money (to pay his tuition fees).’

(64) Temporal clauses

a. NP AT (Type I)

??Dang [NP shucai]_{AT} Mama zhi xiang mai gaolical de
 when vegetable mother only want buy cabbage DE
 shihou, ta yiding hui qu chuantong shichang kankan.
 time she definitely will go traditional market see

Intended ⇒ ‘When, as for vegetables, Mom just wants to buy cabbages, she will definitely go to traditional markets to take a look.’

b. VP AT (Type II)

?Dang [VP mai shucai]_{AT} (ah) Mama zhi xiang mai
 when buy vegetable TOP mother only want buy
 gaolical de shihou, ta yiding hui qu chuantong shichang.
 cabbage DE time she definitely will go traditional market

Intended ⇒ ‘When, as for buying vegetables, Mom just wants to buy cabbages, she will definitely go to traditional markets.’

c. VP AT (Type III)

??Dang [VP chuguo nianshu]_{AT} Zhangsan jue ding yao

when abroad study Zhangsan decide want
 nian Aidingbao de shihou, ta zhidao jizi yao hen nuli.
 study Edinburg DE time he know self have to very hard
Intended ⇒ ‘When, as for studying abroad, Zhangsan decides to apply for *the University of Edinburgh*, he knows that he has to study harder.’

It is not my attempt at discussing how articulated the left peripheral structure of these adverbial clauses can be. Rather, the fact that AT can occur in the left peripheral position of these adverbial clauses suggests that (i.) these adverbial clauses have a set of fully-developed functional projections in the left periphery of the CP layer and this allows AT to occur in the higher position in the periphery, or (ii.) AT resorts to a ‘particular’ syntactic operation blind to the functional structure of the CP periphery. Nevertheless, the first view might run into problems when it comes to the non-restricted distribution of AT.

2.3.4.2 Clausal complements of factive and subjunctive predicates

This section is to examine whether AT is allowed to occur in the clausal complements taken by different predicates. The data from (65) and (66) show that AT is allowed to occur in different embedded contexts, a view being similar to what has been found in Section 2.3.4.2. Still, AT is allowed to occur in the TP-internal (post-subject) position in (65) and (66).

(65) Factive complements

a. NP AT (Type I)

Wo zhidao [[_{NP} shucai]_{AT} Zhangsan zhi mai-le qiezi].
 I know vegetable Zhangsan only buy-ASP eggplant
 ‘I know that as for vegetables, Zhangsan only bought eggplants.’

b. VP AT (Type II)

Wo zhidao [[_{VP} mai shucai]_{AT} (ah) Zhangsan chi hui mai qiezi].
 I know buy vegetable TOP Zhangsan only can buy eggplant
 ‘I know that as for buying vegetables, Zhangsan only tends to buy eggplants.’

c. VP AT (Type III)

Wo zhidao [_{VP} zuo yundong]_{AT} Zhangsan hui xhuan da

I know do exercise Zhangsan will choose take
lanqiu].
basketball

‘I know that as for doing exercise, Zhangsan will only tend to play basketball.’

(66) Subjunctive complement

a. NP AT (Type I)

Wo jianyi [[NP shuiguo]_{AT} Zhangsan yinggai duo chi pingguo]].
I suggest fruit Zhangsan should much eat apple
‘I suggest that as for fruits, Zhangsan should eat more apples.’

b. VP AT (Type II)

Wo jianyi [[VP chi shuiguo]_{AT} Zhangsan yinggai duo chi
I suggest eat fruit Zhangsan should much eat
pingguo]].
apple
‘I suggest that as for eating fruits, Zhangsan should eat more apples.’

c. VP AT (Type III)

Wo jianyi [[VP zuo yundong]_{AT} Zhangsan zuihao da lanqiu.
I suggest do exercise Zhangsan best play basketball
‘I suggest that as for doing exercise, Zhangsan had better play basketball.’

2.3.4.3 Summary

In Section 2.3.4.1 and 2.3.4.2, I have shown that AT can occur in a variety of adverbial clauses and clausal complements, as summarized in Table 2.

Table 2: Distribution of AT in adverbial clauses and clausal complements

| Domain | | Left peripheral position (CP) | | | TP-internal position (post-subject) | | |
|---------------------|-------------------------|-------------------------------|--------------------|---------------------|-------------------------------------|--------------------|---------------------|
| | | NP AT (Type I) | VP AT (Type II) | VP AT (Type III) | NP AT (Type I) | VP AT (Type II) | VP AT (Type III) |
| Adverbial clauses | Conditional clauses | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Concessive clauses | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Causal clauses | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Temporal clauses | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clausal complements | Factive complements | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Subjunctive complements | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

2.3.5 Right dislocation

There is ample reason to argue that AT has to be differentiated from canonical topics in Mandarin. It is known that arguments can undergo right dislocation in Mandarin, as shown in (67), where the subject argument undergoes movement to the rightmost position.

(67) Right dislocation in Mandarin

[_{t_i} kand-dao Lisi le], [Zhsangsan]_i.
see-ASP Lisi SFP



‘(He) already saw Lisi, Zhangsan.’

As illustrated in (68), it is interesting to see that the three types of AT resist right dislocation, however. This can be taken to show that AT cannot be analyzed on a par with a canonical topic in (67).

(68) AT cannot undergo right dislocation

a. NP AT (Type I)

*Zhangsan xiang chi xiangjiao, [_{NP} shuiguo]_{AT}.

Zhangsan want eat banana fruit

Intended ⇒ ‘Zhangsan wants to eat bananas, as for fruits.’

b. VP AT(Type II)

*Zhangsan xiang chi xiangjiao, [VP chi shuiguo]_{AT}.

Zhangsan want eat banana eat fruit

Intended ⇒ ‘Zhangsan wants to eat bananas, as for eating fruits.’

c. VP AT (Type III)

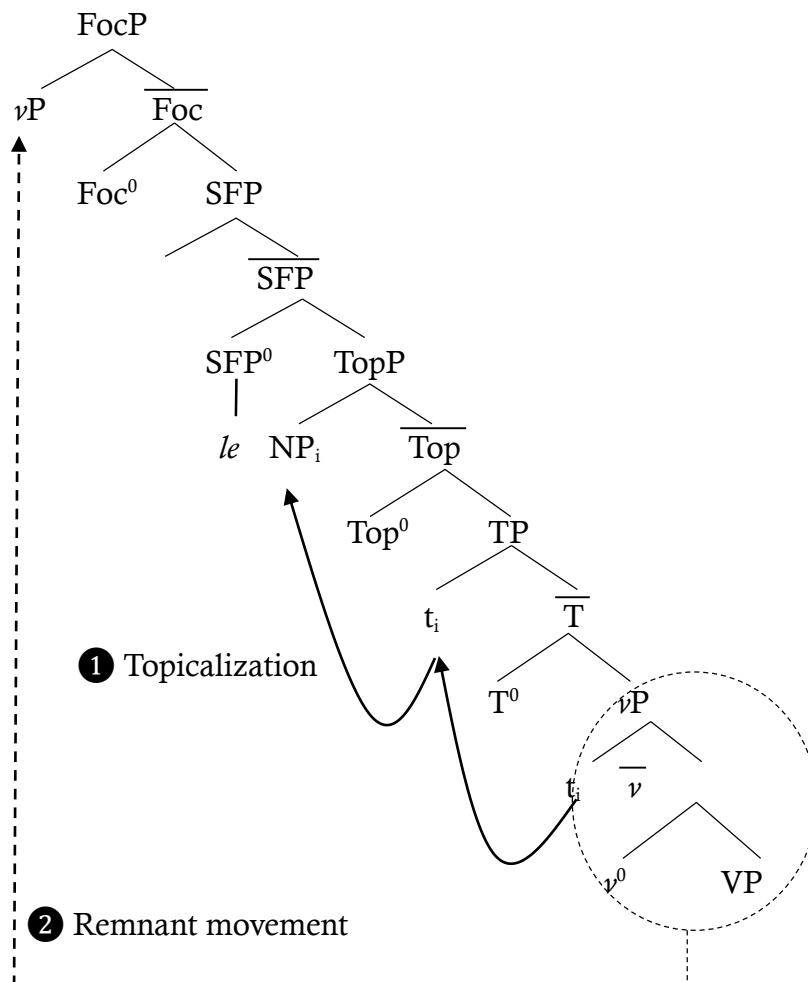
*Zhangsan hui xuan paiqiu, [VP zuo yundong]_{AT}.

Zhangsan will choose volleyball do exercise

Intended ⇒ ‘Zhangsan will choose play volleyball, as for doing exercise.’

Chiang (2015) proposes that the right dislocated NP *Zhangsan* in (67) moves to [Spec, TopP], followed by the remnant movement of *vP* to [Spec, *vP*], as instantiated in (69).

(69) The proposed derivation of (67)



The resistance of AT to right dislocation suggests that AT does not serve as a canonical topic, which simply encodes old information and definiteness in the sense of Tsai (2015a, 2015b). As has been discussed in Section 2.3.1, AT is able to co-occur with a topicalized NP. Interpreted under Badan and Del Gobbo’s analysis (2011), the co-occurrence indicates that there are two topic positions available in the left periphery of CP. As will become clear in Chapter 3, I argue that AT plays a conspicuous role in the way its feature can be checked along of the clausal spine, particularly the CP-layer and the TP-layer, where TopP is allowed to merge.

2.4 Properties of fronted VP in AT VP (Type II) and (Type III)

In this section, I discuss three properties surrounding VP AT (Type II) and VP AT (Type III), and show that they are markedly different from traditional VP fronting in that the latter creates an associated gap in the host clause, while the former does not.

2.4.1 The sentence-initial/medial VP in (Type II) and (Type III) as not a normal VP copy

It is worth taking some time to show that the sentence-initial VP AT (Type II), if it is derived via \bar{A} -movement, cannot be analyzed on a par with the traditional VP fronting. As shown in (70), the whole VP undergoes focus movement (*lian...dou* construction) to the left edge of the clause in (70)a or a middle field of the clause in (70)b (Hsieh 2009) with its original VP obligatorily being deleted. It is observed that the fronted VP under discussion is able to find its base position in the host clause, as shown in (70)c.

(70) VP fronting (via movement and deletion) in Mandarin (Hsieh 2009)

- a. Lian [_{VP} da qiu], Zhangsan dou bu [_{VP} zuo [_{VP} ~~da qiu~~]].
 even play ball Zhangsan all NEG do play ball
 ‘Zhangsan does not even play the ball.’
- b. Zhangsan lian [_{VP} da qiu] dou bu [_{VP} zuo [_{VP} ~~da qiu~~]].
 Zhangsan even play ball all NEG do play ball
 ‘Zhangsan does not even play the ball.’

- c. Zhangsan bu [_{VP} da [_{VP} ~~da~~ qiu].
 Zhangsan NEG play play ball
 ‘Zhangsan does not play the ball.’

However, the sentence-initial/medial VP (Type II) diverges from VP fronting in (70). As evident in (71)b and (72)b respectively, AT VP (Type II) and AT VP (Type III) cannot be reconstructed in their posited base generation site. This reconstruction induces ungrammaticality. (71)a and (72)a are taken to illustrate that VP AT (Type II) and VP AT (Type III) do not have an associated gap in the host clause on the surface.

(71) Hypothetical reconstruction of VP AT (Type II)

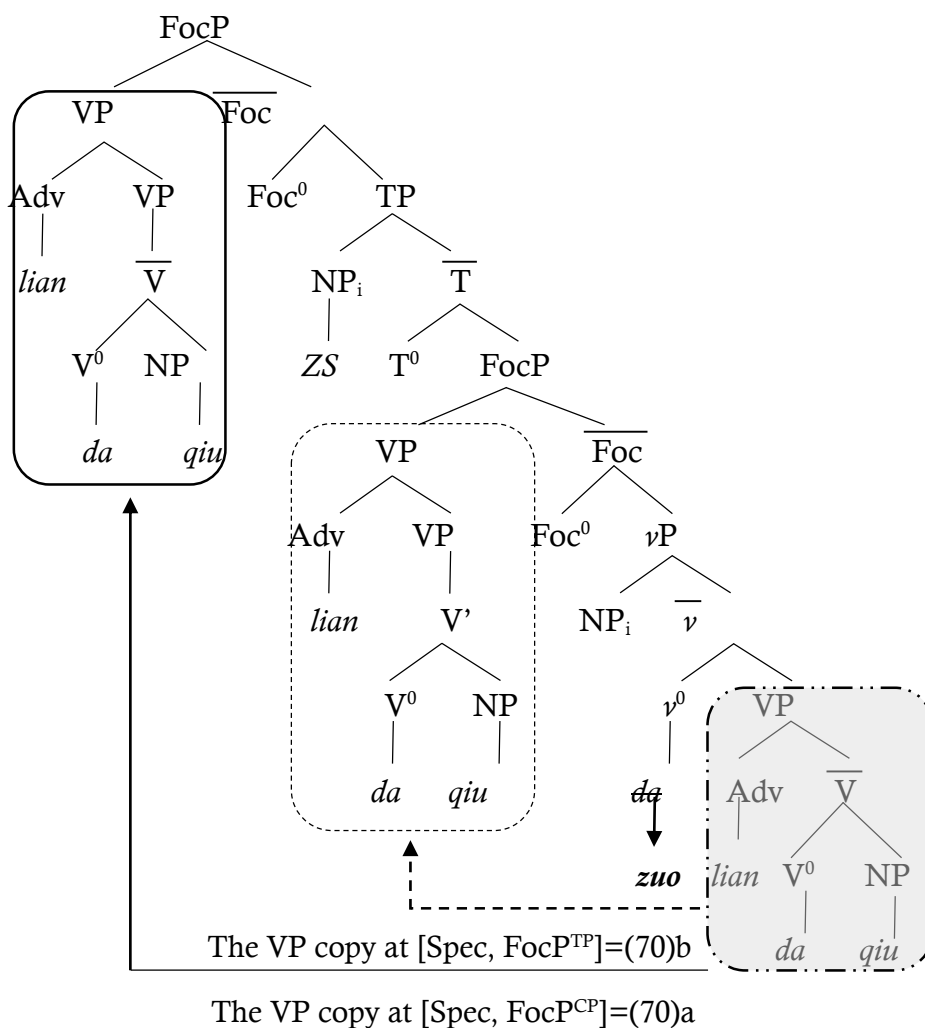
- a. [_{VP} Chi shuiguo]_{AT}, Zhangsan xihuan [_{VP} chi pingguo].
 eat fruit Zhangsan like eat apple
 ‘As for eating fruits, Zhangsan likes to eat apples.’
- b. *Zhangsan xihuan [_{VP} chi pingguo] [_{VP} chi shuiguo].
 Zhangsan like eat apple eat fruit

(72) Hypothetical reconstruction of VP AT (Type III)

- a. [_{VP} Zuo yundong]_{AT}, Zhangsan hui [_{VP} da lanqui].
 do exercise Zhangsan will play basketball
 ‘As for doing exercise, Zhangsan will choose to play basketball.’
- b. *Zhangsan [_{VP} da lanqui] [_{VP} zuo yundong].
 Zhangsan play basketball do exercise

The derivation of (70)a-b is represented in (73). To keep the VP copy intact at either [Spec, FocP^{CP}] or [Spec, FocP^{TP}] and satisfy a PF-requirement that v^0 has to be lexicalized, Hsieh (2009) proposes that the copy of the verb at v^0 can only undergo partial deletion and be interpreted as a resumptive *pro*-verb *zuo* ‘do’ at PF so that v^0 can be phonetically supported. It follows from the derivation in (73) that the VP fronting is derived via overt movement and its base-generation site is in the VP domain.

(73) The derivation of VP fronting in (70)a-b



The above discussion is sufficient to show that the sentence-initial/medial VP AT (Type II) cannot be analyzed on a par with VP fronting in (70)a-b in two regards. First, VP AT (Type II) reinforces lexical identity effects; the verb in the high VP and the low VP has to be identical and spelt out at the same time. In VP fronting (70), partial deletion and phonetic lexicalization are not motivated to have the identical verbs in two positions, instead. Second, VP fronting in (70)a-b represents an instance of focalization rather than topicalization.

2.4.2 Fronted VP in VP AT (Type II) as a bare VP

In Section 2.2.1 and 2.2.3, lexical identity effects and the hallmark of \bar{A} -properties have shown that VP AT (Type II) involves a copy of the VP in the host clause, though VP

AT (Type II) and the main VP contain different object NPs. Another accompanying question is whether the structural size of VP AT (Type II) is ν P or VP. I will adduce evidence in support of the fact that VP AT is VP rather than ν P.

In discussing Hebrew verb doubling in (74), Landau (2006), under the assumption that the infinitival verb is the phonological spell-out of a complex [$\sqrt{V}+\nu$] in which ν contributes the *banyan* template, argues that ν P is copied to the sentence-initial position.

(74) VP fronting in Hebrew

liknot et ha-praxim, hi kanta
 to-buy ACC the-flowers she bought

‘As for buying the flowers, she bought.’ (Landau 2006, p.37, ex.8a)

Due to the impoverished morphology of Mandarin, verb conjugation fails to provide a solid testing ground for this. Nonetheless, there are three pieces of diagnostic evidence.⁴²

First, Huang et al. (2009) argues for V^0 -to- ν^0 movement in Mandarin, evidenced by (75), where the verb *da* ‘hit’ moves across the designated position of the VP-level frequency adverbial phrase *liangci* ‘two times’ (the irrelevant details are omitted here).

(75) V^0 -to- ν^0 movement in Mandarin

Zhangsan [ν P dai_i-guo [ν P liangci [ν P t_i huai-ren]]]
 Zhangsan hit-ASP two times bad-guy

‘Zhangsan beat those bad guys twice.’

Granted such analysis, suppose that VP AT (Type II) is a copy of ν P, and it is predicted that the frequency adverbial phrase is allowed to be phonologically pronounced in the left periphery. This prediction is not born out in (76). (76)a shows that if the copying mechanism targets the ν P-size constituent, where V^0 has undergone head-to-head movement to ν^0 , the resulting sentence is ungrammatical. (76)b shows that the fronted constituent must be in a bare VP form even without VP-level adverbs.

⁴² In discussing verb/predicate clefting in Yiddish, where the clefted predicate must be accompanied by the past participle morphology or the infinitive morphology, Cable (2004) contends that there must be morphological features on the root beside [+V], or the ν P will be unpronounceable. In other words, the structural size of the clefted predicate is a ν P constituent. However, this verb conjugation evidence is absent in Mandarin.

(76) VP AT as a copy of ν P

- a. * [ν P Mai-guo [ν P liangci **shuiguo**]]_{AT}, Zhangsan zhi
 buy-ASP two times fruit Zhangsan only
 [ν P mai_i -guo [[ν P liangci [ν P t_i pingguo]]].
 buy-ASP two times apple
Intended \Rightarrow ‘As for buying fruits twice, Zhangsan only bought apples twice.’
- b. * [ν P Liangci **shuiguo**]], Zhangsan zhi
 two times fruit Zhangsan only
 [ν P mai_i [ν P liangci [ν P t_i pingguo]]].
 buy two times apple

Another piece of evidence comes from the reflexive binding. Huang (1994) points out that the reflexive *tajizi* ‘himself’ can be bound by the trace of the embedded subject at [Spec, ν P] if the fronted constituent is ν P, as in (77). Thus, the co-reference between the reflexive *tajizi* and the matrix subject *Zhangsan* is blocked, because there is a subject trace at [Spec, ν P] serving as the intervener for the binding relation.

(77) The reflexive *tajizi* bound by the trace at [Spec, ν P]

Zhangsan_i renwei [ν P t_j **zema taziji***_{i/j}-de xiaohai]_z Lisi_j
 Zhangsan think blame himself-POSS children Lisi
 juedui bu hui t_z.
 absolutely NEG will

‘Zhangsan thinks that as for blaming his children, Lisi absolutely won’t do it.’

In (78), VP AT (Type II) is in the embedded clause, and it is shown that the reflexive *zijia* can be bound by either the matrix subject *Zhangsan* or the embedded subject *Lisi*. Following Huang’s analysis, VP AT (in bold) cannot be analyzed as ν P, because there is no trace at [Spec, ν P] serving an intervener. As instantiated in (79)a, it is predicted that if VP AT (Type II) is a ν P, the matrix subject *Zhangsan* fails to bind the reflexive *tajizi* because of the intervening trace at [Spec, ν P]. This prediction is not confirmed. By contrast, (78) lends support to (79)b, where VP AT (Type II) is a bare VP with no intervening trace that blocks

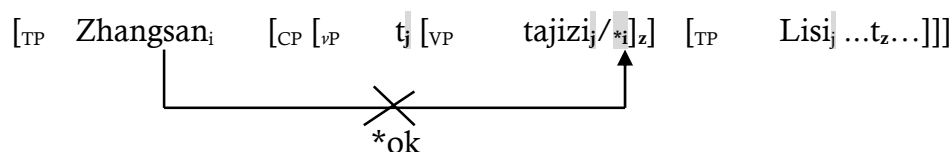
the matrix subject *Zhangsan* from binding the reflexive.

(78) VP AT in Type II in the embedded clause

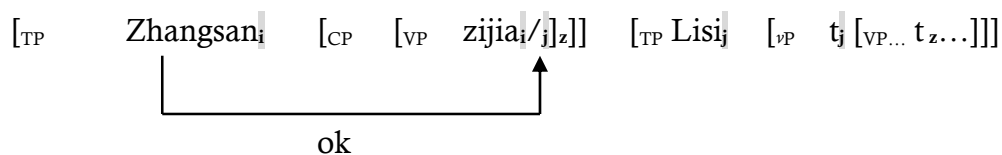
Zhangsan_i renwei_[VP tuixiao zijia_i/_j-de-chanpin] Lisi_j hui
 Zhangsan think promote self-POSS-product Lisi will
 tuixiao Taiyangping.
 promote Sun cakes
 ‘Zhangsan thinks, for as promoting his home-made products, Lisi will promote Sun cakes.’ (his = *Zhangsan* or *Lisi*)

(79) Two scenarios

a. The copy is ν P, and the subject trace at [Spec, ν P] is an intervener



b. The copy is VP, and there is no subject trace in the fronted VP (= (78))



The third piece of evidence comes from the fact that VP AT (Type II) and VP AT (Type III) cannot take a Low aspect (Aspect^{LOW}) (See Liao 2011). The contrast between (80)a and (80)b shows that the verb in the host clause is able to take the aspect^{LOW} marker *-le* but VP AT (Type II) is unable to contain it. This line of reasoning also applies to VP AT (Type III) in (81).

(80) VP AT (Type II) resists the occurrence of Aspect^{LOW}

a. VP AT with Aspect^{LOW}

*[_{ASP}LOW [_{ASP}⁰ mai_i-le [_{VP} [_V⁰ t_i shuiguo]]]], Zhangsan_j
 buy-ASP fruit Zhangsan
 [_{VP} t_j [_V⁰ [mai_i-le]_k [_{ASP}LOW [_{ASP}⁰ t_k [_{VP} [_V⁰ t_i pingguo]]]]].
 buy-ASP apple

Intended ⇒ ‘As for having bought fruits, Zhangsan bought apples.’

b. VP AT with no Aspect^{LOW}

[_{VP} [_V⁰ mai shuiguo]]], Zhangsan_j
 buy fruit Zhangsan
 [_{νP} t_j [_V⁰ [mai-1e]_k [_{AspP}LOW [_{AspP}⁰ t_k [_{VP} [_V⁰ t_i pingguo]]]]]]
 buy-ASP apple
 ‘As for buying fruits, Zhangsan bought apples.’

(81) VP AT (Type III) resists the occurrence of Aspect^{LOW}

a. VP AT with Aspect^{LOW}

*[_{AspP}LOW [_{AspP}⁰ Zuo_i-guo [_{VP} [_V⁰ t_i yundong]]]], Zhangsan_j cengjing
 do-ASP exercise Zhangsan used to
 [_{νP} t_j [_V⁰ [da_i-guo]_k [_{AspP}LOW [_{AspP}⁰ t_k [_{VP} [_V⁰ t_i lanqiu]]]]]].
 play-ASP basketball

Intended ⇒ ‘As for having done exercise, Zhangsan used to play basketball.’

b. VP AT with no Aspect^{LOW}

[_{VP} [_V⁰ Zuo yundong]]], Zhangsan_j cengjing
 do exercise Zhangsan used to
 [_{νP} t_j [_V⁰ [da_i-guo]_k [_{AspP}LOW [_{AspP}⁰ t_k [_{VP} [_V⁰ t_i lanqiu]]]]]].
 play-ASP basketball

‘As for doing exercise, Zhangsan used to play basketball.’

Granted the conclusive view that VP AT (Type II) and VP AT (Type III) have to be a bare VP, it follows that dynamic modals, merged between ν P and VP in the lexical layer (Tsai 2015c), cannot be part of VP AT, as evident in (82).

(82) The dynamic modal cannot be part of VP AT

a. [_{VP} Chi shuiguo], Zhangsan [_{ModP}^{DYNAMIC} gan [_{VP} chi liulian]].
 eat fruit Zhangsan dare eat durian

‘As for eating fruits, Zhangsan dare to eat durians.’

b. * [_{ModP}^{DYNAMIC} gan [_{VP} chi shuiguo]], Zhangsan [_{Mod}^{DYNAMIC} gan
 dare eat fruit Zhangsan dare
 [_{VP} chi liulian]].
 eat durian

The above discussion has proved that VP AT (Type II and III) has to be in a bare form; that is, a copying mechanism, if there is, has to target the bare VP and make a copy of it. Granted the VP size of VP AT (Type II), another immediate question is how to account for NP AT (Type I) and VP AT (Type II) in a unified way, as in (83). In Chapter 3, it is proposed that these two types are derivationally related and their surface differences pertain the spell-out of strong features.

(83) NP AT (Type I) and VP AT (Type II)

a. NP AT (Type I)

[_{NP} Rou]_{AT}, Zhangsan xihuan chi niurou.
 meat Zhangsan like eat beef

‘As for meat, Zhangsan likes to eat beef.’

b. VP AT (Type II)

[_{VP} Chi [rou]]_{AT}, Zhangsan xihuan chi niurou.
 eat meat Zhangsan like eat beef

‘As for eating meat, Zhangsan likes to eat beef.’

2.4.3 Fronted VP (Type III) not a purposive clause

A word of clarification is that VP AT (Type III) should be distinguished from genuine purposives in Mandarin, though they are similar on the surface. It is observed that two VPs in Type III are exchangeable, and this exchangeability causes a slight semantic difference, as shown in (84).

(84) VP AT (Type III) in Mandarin

a. [_{VP} Qu Meiguo]_{AT}, Zhangsan hui [_{VP} da feiji].
 go America Zhangsan will take airplane

‘As for going to America, Zhangsan will take the airplane, (but not take the ship).’

b. [_{VP} Da feiji]_{AT}, Zhangsan hui [_{VP} qu Meiguo].
 take airplane Zhangsan will go America

‘As for taking the airplane, Zhangsan will go to America, (but not to Japan).’

One might argue that (84)a-b are two apparent instances of purposives, whose posited underlying structures are represented in (85), and claim that (84)a-b are derived from the left adjunction of purposive clauses to a higher functional projection. To be specific, it is posited that (84)a can be analyzed in (86)a-b, for instance.⁴³

(85) Purposives in Mandarin

- a. Zhangsan hui da feiji [PURPOSIVE qu Meiguo].
 Zhangsan will take airplane go America
 ‘Zhangsan will take the airplane to go to America.’
- b. Zhangsan hui qu Meiguo [PURPOSIVE da feiji].
 Zhangsan wil go America take airplane
 ‘Zhangsan will go to America to take the airplane (there), (because the closest airport is located in America, not in his country, Canada).’

(86) Hypothetical analysis of VP AT (Type III) in (84)a

- a. Underlying structure of (85)a

[_{TP} Zhangsan [_{VP} [_V⁰ hui da feiji] [_{PURPOSIVE} qu Meiguo]]].
 Zhangsan will take airplane go America

- b. Left-adjunction (= (84)a)

[_{PURPOSIVE} qu Meiguo]_i [_{TP} Zhangsan [_{VP} [_V⁰ hui da feiji] t_i]]

Nevertheless, there is independent evidence showing that VP AT (Type III) cannot be analyzed on a par with Mandarin purposives. First, as evident from (87)a to (87)b, AT VP (Type III) is unable to be reconstructed into its ‘hypothetical’ base-generation position. If (87)a is a genuine purposive, (87)b is predicted to be grammatical. This prediction is not confirmed, however.⁴⁴ To make (87)b interpreted as a genuine Mandarin purposive, the

⁴³ Liao and Lin (2015) argue that there are three types of purposive constructions in Mandarin, the *lai* purposive, the *hao*-purposive and the bare purposive. Each of them deserves a different syntactic analysis; the *lai*-purposive involves complementation, the *hao*-purposive conjunction and the bare purposive left adjunction. I will not discuss three types of purposive in detail but limit my attention to the bare purposive of our immediate concern.

⁴⁴ It is noteworthy that in (i.), the reflexive *zi*- ‘self’ can be co-referential with the matrix subject. Nevertheless, I suggest that (i.) is not an instance of VP AT (Type III) but is a purposive. First, as shown in (ii.), the high VP can be reconstructed into the main clause if it undergoes left adjunction as in (86)b. VP AT (Type III) lacks this property, as evident in (87)b. Second, as shown in (ii.), it is apparent that the reflexive *zi* is c-commanded by the matrix subject *he*, satisfying Binding Condition A. This can be taken to show that the

complementizer *lai* is involved to form the *lai*-purposive construction, as illustrated in (88), following Liao and Lin's (2015) analysis. Besides, if there is a derivational relation between (84)a and (85)a, it is not clear why the purpose reading in (84)a is blocked but it is available in (85)a.

- (87) a. [Zuo yundong]_{AT}, Zhangsan hui xuan paobu.
do exercise Zhangsan will choose jog
'As for doing exercise, Zhangsan will choose to jog.'
- b. *Zhangsan hui xuan paobu [zuo yundong].
Zhangsan will choose jog do exercise

- (88) The genuine purposive version of (87)b
Zhangsan hui xuan paobu [lai zuo yundong].
Zhangsan will choose jog LAI do exercise
'Zhangsan will choose jogging to do exercise.'

Second, if VP AT (Type III) is derived via movement, it is predicted that the Negative Polarity Item (NPI) *renhe difang* 'any place' in the VP should undergo the LF-reconstruction in order to get licensed by the negator *bu* 'not'. This prediction is not confirmed, as evident in (89)a-b, where the reconstruction is undone. In addition, the *wh*-indeterminate *sheme-dongxi* "what" in (89)b is exempted from a licensing context. (89)a-b indicate the absence of reconstruction effects. However, the genuine Mandarin purposives in (90) show that the NPI item and the *wh*-indeterminate must be c-commanded by their negator licensors. If the VPs in the purposives are fronted, as in (89)a-b, the NPI and the *wh*-indefinite are not licensed.⁴⁵

VP *hui zijiade fangzi* in (i.) is the moved VP. Third, following Liao and Lin's (2015) analysis, the direct object of the verb in a bare purposive gives a means/manner reading. As self-evident in (ii.), the object noun *jichengche* 'taxi' serves as the means of transportation by which *ta* 'he' is able to take in order to return to his house.

- (i.) Hui zi-jia-de fangzi, ta_i hui xuan-da jichengche.
return self-house-DE house, he will choose-take taxi.
'As for returning to the house of himself, he will choose to take the taxi.'
- (ii.) Ta_i hui xuan-da jichengche hui zi-jia-de fangzi.
He will choose-take taxi return self-house-DE house
'He will choose to take the taxi to return to his house.'

⁴⁵ Hsiao-hung Iris Wu (p.c.) observes that in (89)a the NPI can be licensed by *dou* 'all' if put in the post-subject position, as shown in (i). I will leave aside complications underlying the licensing condition of *dou*.

(89) Negative Polarity Licensing in the hypothetical status of VP AT (Type III) as purposives

- a.*/?/[_{VP}Qu renhe-difang]_{AT}, Zhangsan bu hui da feiji.
 go any place Zhangsan NEG will take airplane
- b.*/?/[Mai sheme-dongxi]_{AT}, Lisi bu renwei Zhangsan.
 buy what-thing Lisi NEG think Zhangsan
 hui qu Costco.
 will go Costco

(90) Negative Polarity Licensing in purposive clauses

- a. Zhangsan bu hui da feiji [_{VP} qu renhe difang].
 Zhangsan NEG will take airplane go any place
 ‘Zhangsan will not take the airplane to some place.’
- b. Lisi bu renwei [Zhangsan hui qu Costco mai
 Lisi NEG think Zhangsan will go Costco buy
 sheme-dongxi].
 what-thing
 ‘Lisi does not think that Zhangsan will go to Costco to buy something.’

Third, following [Liao and Lin’s \(2015\)](#) analysis of Mandarin purposive clauses, if the embedded object is overt in a bare purposive, the matrix object is interpreted as the manner or means by which the purposive is accomplished. See (85)a for example. The matrix object *feiji* ‘airplane’ is a means of transportation by which *Zhangsan* is able to achieve the purpose of going to America. This line of reasoning, however, does not apply to VP AT (Type III) in (84)a-b; namely, the manner/means reading is absent. (84)a, for example, is understood as saying that it comes to the event of going to America, *Zhangsan* will take the airplane.

To sum up, the three arguments presented here have shown that VP AT (Type III) cannot be analyzed as the purposive clause that involves extraposition.

(i) [_{VP}Qu renhe-difang], Zhangsan **dou** bu hui da feiji.
 go any place Zhangsan all NEG will take airplane
 ‘To go to any place, Zhangsan will not take the airplane.’

2.5 Summary

In this section, I presented novel observations and generalizations regarding AT in Mandarin, and have argued that AT has three sub-types, NP AT (Type I), VP AT (Type II) and VP AT (Type III). It is further shown that the first two types behave identically in terms of A- and \bar{A} -properties and distribution. A- and \bar{A} -properties show that these two types of AT are extracted constituents. In marked contrast, VP AT (Type III), though its distribution is identical to that of NP AT (Type I) and VP AT (Type II), displays no island sensitivity effects showing that it is derived via movement. In Section 3, I review previous analyses of AT in Mandarin and other languages, but it will be shown that none of them is able to account for the observations in Section 2.

3. Previous analyses

This section is primarily divided into two parts. Section 3.1 discusses the distribution of AT in previous studies, while Section 3.2 focuses on the derivation of AT, which gives rise to a base generation-movement paradox. It should be noted that there is a rich body of literature regarding topic in Mandarin on the market, but I will focus on the previous studies that provide a more fine-grained analysis of AT.

3.1 The distribution of Aboutness Topic

Under the cartographic approach to the left periphery of CP, it has been widely established that AT is located in a rather high position in the CP layer, though its precise designated position relative to other extended functional projections remains open to further discussion. Nonetheless, there have been several attempts to articulate the TP/IP domain along the line of Rizzi's (1997) multiple functional projections. Shyu (1995) argues that an extended functional projection (FP) projects within the IP field to accommodate the focused *lian*-NP phrase. In view of object preposing phenomena in Mandarin, Paul (2002) argues for the sentence-medial TopP and FocP. Badan (2007) argues for a fine-grained distinction between a high periphery (CP) and a low periphery (IP) of Italian and Chinese. Belletti (2004) maintains in Italian that the area above VP bears close resemblance

to the left periphery of CP, allowing FocP and TopP. Hsu (2012, 2014) also proposes the fine structure of IP in Mandarin in light of the fact that the topic NP and the focused NP can co-occur in the IP/TP domain. These accounts attempt to address two core questions. First, as one might notice, these accounts do not distinguish types of topics that are allowed to occur in the TP layer or the CP layer. The mysterious property of AT from Section 2.3.1 and 2.3.2 is that AT does not have a fixed position along the clausal spine of CP and TP. Second, since Emonds (1970), English left dislocation and topicalization have been regarded as a syntactic manifestation of root properties; namely, they are only allowed to occur in root clauses or a subset of root-like clauses. However, it is found that topicalization is also allowed to occur in embedded clauses, as evident in (91).

(91) Topicalization in the embedded context in English

It appears [that [this book]_i he read t_i thoroughly.]

(Hooper and Thompson 1973:478)

Emonds (2004) also observes that some dependent clauses behave similarly to root clauses, as illustrated in (92). (92)a-b show that the finite clause allows topicalization, while (92)c-d show that the adjunct clause disallows topicalization. To account for the asymmetry, Emonds proposes the notion of Discourse Projection, an underspecified projection immediately dominating IPs, and its Spec provides a landing site for root movements, like auxiliary inversion, *wh*-fronting, topicalization, among others.

(92) Root properties in embedded contexts

- a. Bill warned us that [[_{NP} flights to Chicago]_i we should try to avoid t_i].
- b. *Bill warned us [[_{NP} flights to Chicago]_i to try to avoid t_i].
- c. *Mary used another company since/until [[_{NP} flights to Chicago]_i they could avoid t_i].
- d. * A warning that [[_{NP} flights to Chicago]_i travelers should avoid t_i] will be posted.

(Emonds 2004, p. 77)

It is interesting to ask whether AT, a subtype of topic, displays the root properties. In what follows, I review previous studies on the distribution of AT in Mandarin and other languages and arrive at a proper crosslinguistic characterization of AT, serving as the basis

of discussion in Chapter 3.

3.1.1 Frascarelli and Hinterhölzl (2003): Aboutness-Shift Topic in the left periphery of Italian

Based on their work on the interpretive and prosodic properties of topics, [Frascarelli and Hinterhölzl \(B&H\) \(2003\)](#)⁴⁶ argue that as visualized in (93), three types of topic (Aboutness-Shift (AS) Topic⁴⁷, Contrastive Topic, and Familiar Topic⁴⁸) are phonologically distinguished and occupy different positions in the left periphery of CP. (93) are exemplified in (94)a-e, where it is shown the types of topic and *wh*-phrases have to be ordered in a fixed order. Consider (94)e. Frascarelli and Hinterhölzl point out that the subject-topic *io* (AS-Topic) marks a shift in the conversation: the speaker is still talking about English (aboutness) but she changes the aboutness topic to the comment on her personal relation to the language. By contrast, the direct object *ingles* (A Familiar-Topic/Given-Topic) is resumed by the clitic *lo*, and is introduced and repeated as the background element.

(93) Topic hierarchy in Italian (Frascarelli and Hinterhölzl 2003)

| | | | | | |
|-----------|---------------------|-------------------|-------------------|-------------------|-----------------------|
| Syntax | [_{AS-TOP} | [_{CONT} | [_{FoCP} | [_{FAMP} | [_{IP} |
| Phonology | L*+H tone | | | L tone | |

(Modified from [Frascarelli and Hinterhölzl 2003](#), p.22, ex. 37)

(94) Examples of the topic hierarchy in (93)

a. **AS-Topic > *wh*-phrase** ([Frascarelli and Hinterhölzl 2003](#), p.8, ex.vi)

[Rispetto agli altri materiali]_{AS-TOPIC}, come ti sei trovata?

‘As for the other materials, how did you find them?’

b. **AS-Topic > Foc** ([Frascarelli and Hinterhölzl 2003](#), p.8, ex.vii.)

[Quello]_{AS-TOPIC} [ANCHE SUL QUESTIONARIO]_{FoC} l’ho scritto.

‘I wrote that also ON THE QUESTIONNAIRE.’

⁴⁶ Also see [Bianchi and Frascarelli \(2010\)](#) for a more refined version of Frascarelli and Hinterhölzl’s discussion (2003).

⁴⁷ AS-Topic connects [Reinhart’s \(1982\)](#) aboutness (sentence topic/file card) to the property of being newly introduced or reintroduced and changed to (= *Shift*)

⁴⁸ [Frascarelli \(2011\)](#) uses the term *Given Topic* (G-Topic).

- c. **AS-Top > Cont-Top** (Frascarelli and Hinterhölzl 2003, p.8, ex.v)
 [Io]_{AS-TOPIC}, una cosa che ho trovato positiva, è stata la comprensione.
 ‘As for me, something that I found very positive was the comprehension part.’
- d. **Cont-Top > Familiar-Top** (Frascarelli and Hinterhölzl 2003, p.8, ex.xiv)
 Io francamente questo- questa attività in particolare non me la ricordo.
 ‘Frankly, I don’t remember that particular activity.’
- e. **AS-Top > Familiar-Top** (Frascarelli and Hinterhölzl 2003, p.6, ex. 7)
 Era tutto molto nuovo nel senso che comunque la lingua inglese attraverso i programmi sul computer diciamo [...] comunque l’inglese risultava anche facendolo da solo più interessante [...] **io, inglese non- premetto non l’avevo mai fatto.** (‘Everything was very new to me in the sense that I had never studied English through computer programs [...] and through self-learning English appeared more interesting to me [...] **I must say that I had never studied English before**)
- [Io]_{AS-TOP} , [inglese]_{GIVEN-TOP} [...] non l’avevo mai fatto.
 I English not it(CL) have.PAST.1SG never done
 ‘I must say that I had never studied English before.’

As can be seen from the hierarchy, these types of topic are located in a specific order in the CP layer. AS Topic, arguably composed of an aboutness feature and a phonological feature (H) meaning ‘new x’, occupies the highest position in the left periphery with respect to *wh/focus* constituents. Familiar-Topic, by contrast, occupies the lowest position.

B&H’s prosodic evidence lends weight to the view that various types of topic are located in a strict order and AS-Top of our concern is in the highest position. What is worth noting in B&H’s study is that the right periphery seems to exclude AS-Top and Cont-Top.

The hierarchy explains the puzzle why AT resists right dislocation, because the right dislocated argument is Familiar-Topic (93), which is to encode old or known information. Nevertheless, AT plays a more conspicuous role in being responsible for the integration of syntactic structure (utterance) into the discourse. This fares well with Rizzi’s (1997) view that the left periphery serves as the gateway toward syntax and discourse. In addition, it has been shown that AT in Mandarin does not have a fixed position. The hierarchy in (93) fails to capture the wide distribution of AT in Mandarin.

3.1.2 Badan and Del Gobbo (2011): Left periphery of Mandarin

In view of the relative distribution of AT, HT and LD, [Badan and Del Gobbo \(2011\)](#) argue for the fine structure of the left periphery of Mandarin in (95).^{49,50}

(95) The left periphery of Mandarin

Aboutness Topic > Hanging Topic > Left Dislocation > *lian*-Focus > IP

As shown in (96)⁵¹, HT has to precede LD (the left dislocated PP), whereas in (97), AT has to precede LD. (98) further shows that AT has to precede HT. It is therefore concluded that AT occupies a high position and cannot be preceded by other types of topic, the view consistent with the ordering of topics in Italian in Section 3.1.1.⁵²

⁴⁹ [Shyu \(2014\)](#) presents a critique of Badan and del Gobbo's distinction between HT and LD. For example, Badan and del Gobbo claim that multiple PP-topicalization (HD) is possible, as shown in (i), and they treat Mandarin PPs in (i.) as thematicized LDs. Nonetheless, Shyu points out that it remains not clear whether the PPs in (i.) should be regarded as the arguments of the verb or Scene Setting PPs, and how the PPs are distinguished from the PPs in (ii.). As HD and LD are not of concern in this dissertation, to avoid the peripheral discussion, I will leave the relevant discussion aside.

- (i.) [PP Cong zhe-jia yinhang], [PP ti/wei Zhangsan], wo zhidao women
 from this-CL bank for Zhangsan I know we
 keyi jiedao henduo qian.
 can borrow much money
 'From this bank, for Zhangsan, I know we can borrow a lot of money.'
 (Slightly modified from [Badan and del Gobbo 2011](#), ex. 29)

- (ii.) [PP Zuotian], [PP zai xuenxiao], wo kandao yixie xuesheng
 yesterday at school I see some students
 shou-le shang.
 get-ASP wound
 'Yesterday, at school, I know some students were wounded.'
 (Slightly modified from [Shyu 2014](#), p. 104, ex. 14)

⁵⁰ [Cheung \(2013\)](#) provides new data counterexemplifying Badan and Del Gobbo's proposed hierarchy of topics in the CP. I will reproduce her arguments in Chapter 3.

⁵¹ As the judgement of examples presented in their paper is different from that of the native speakers of Mandarin, I consulted, I reproduced most of the examples but their generalizations hold in most cases.

⁵² Nevertheless, [Cheung \(2015\)](#) argues that the categorical status of topics affect the ordering of topics. For example, as shown in (i), the DP topic is related to the comment in the form of an associated gap, a resumptive pronoun or an epithet, when preceding the PP topic (LD in the sense of Badan and Del Gobbo). In marked contrast, the reverse order of the DP topic and the PP topic induces ungrammaticality. Treating the topic DP as a LD (because it creates a gap), Badan and Del Gobbo's analysis is confronted with difficulty explaining why two LDs are not freely ordered.

- (i.) [DP Zhangsan]_i a, [PP zai tushuguan]_j, wo t_j pengdao-guo
 Zhangsan TOP at library I run into-ASP
 t_i/ta_i/zhe-ge shudaizi_i henduo ci.
 he/this-CL bookworm many time
 - 107 -

(96) HT must precede LD

a. ^{OK}HT>LD

[Zhangsan_i]_{HT}, [cong zhe-jia yinhang]_{DL}, wo zhidao women keyi
 Zhangsan from this-CL bank I know we can
 ti ta_i jiedao hen duo qian.
 for him borrow very much money
 ‘Zhangsan, from that bank, I know that we can borrow a lot of money for him.’

b. ^{*OK}LD>HT

[cong zhe-jia yinhang]_{DL}, [Zhangsan_i]_{HT}, wo zhidao women keyi
 From this-CL bank Zhangsan I know we can
 ti ta_i jiedao hen duo qian.
 for him borrow very much money

(97) AT must precede LD

a. ^{OK}AT>LD

[shuiguo]_{AT} (ah), [pingguo]_{iLD}, Zhangsan chi-le henduo t_i.
 fruit PART apple Zhangsan eat-ASP many
 ‘As for fruits, apples, Zhangsan ate many.’

b. ^{*OK}LD>AT

[Pingguo]_{iLD}, [shuiguo]_{AT}, Zhangsan chi-le henduo t_i.
 apple fruit Zhangsan eat-ASP many

(98) AT must precede HT

a. ^{OK}AT>HT

[Shuiguo]_{AT} (ah), [Lisi]_{HD}, wo tingshuo ta zui ai chi
 fruit PART Lisi I hear he most like eat

‘Zhangsan, at the library, I ran into /him/this bookworm many times.’

- (ii.) [PP zai tushuguan]_j, [DP Zhangsan]_i a, wo t_j pengdao-guo
 at library Zhangsan TOP I run into-ASP
 t_i/ta_i/zhe-ge shudaizi_i henduo ci.
 he/this-CL bookworm many time (Cheung 2015, ex. 96b)

pingguo.

apple

‘As for fruits, Lisi, I heard that he likes to eat apples very much.’

b. *OK/?? HT>AT

[Lisi]_{HD} [shuiguo]_{AT} (ah), wo tingshuo ta zui ai chi

Lisi fruit PART I hear he most like eat

pingguo.

apple

Again, the hierarchy in (95) does not readily capture the wide distribution of AT that is able to occur in any position not lower but higher than the lexical domain (ν P).

3.2 The base generation-movement paradox

As introduced in Section 1, there are three types of topic structure in Mandarin and other Asian languages. A view widely taken in the previous scholarship is that while AT is derived via base generation, LD and HT are derived via movement, as recapitulated in (99). Following Huang (1982) and Li (2000), Badan and De Gobbo (2011) conclude that topic structures with a gap is derived via \bar{A} -movement, as shown in (99)a, where the associated gap in the object position is left by the moved NP *naben shu* ‘that book’. As for HT in (99)b, Cheung (2008) argues that HT is base-generated in [Spec, TopP] and the null operator is merged to trigger predication by turning the host clause into an open predicate and allowing it to be predicated of the topic.

(99) The derivation of Left Dislocation (LD) and Hanging Topic (HT) in Mandarin

a. Left dislocation - \bar{A} -movement analysis (Shyu 1995; Huang et al. 2009; Badan & del Gobbo 2011, among others)

[_{TopP} [Na-ben shu]_i]_i, Zhangsan kan-guo t_i le.
that-CL book Zhangsan read-ASP SFP

‘That book, Zhangsan already read.’

b. Hanging topic- Null operator analysis (Cheung 2008)

[_{TopP} [Zhangsan]_i]_i, [_{CP} Op_i [_{TP} ta_i [_{VP} renshi Lisi]]].
Zhangsan he know Lisi

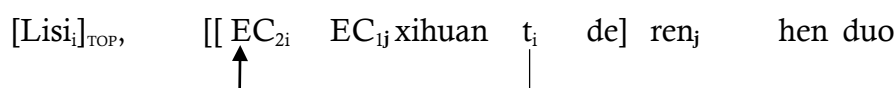
‘Zhangsan, he knows Lisi.’

Another rather interesting movement account of topicalization is proposed by Huang’s (1984) *Generalized Control Rule*, stating that an empty pronominal is co-indexed with the closest nominal element. In (100), the relative clause (RC) contains two empty categories (EC) and has one overt topic NP, and the RC has two readings.

- (100) [Lisi]_{TOP}, [[EC₁ xihuan EC₂ de] ren hen duo.
 Lisi like DE people very many
 a. ‘Lisi, people who he likes are many.’ (⇒ subject reading)
 b. ‘Lisi, people who like him are many.’ (⇒ object reading)

According to the GCR, the subject reading in (100)a results from the empty category (EC₁) in the subject position that starts as a pronominal and is co-indexed with the closest nominal, that is the topic NP *Lisi*. By contrast, the object reading in (100)b is because the empty category (EC₂) in the object position moves to a topic position within the relative clause where it is co-indexed with the closet nominal element, the topic NP *Lisi*, as depicted in (101).

(101) The derivation of the object reading (= (100)b)



Apparently, the above discussion makes a prediction that topic structures (LD) involving associated gaps are derived via movement, while topic structures (HD) resorting to a resumptive strategy are not derived via movement but other means of syntactic operations. Then, how about the derivation of AT? Its precise derivation remains a piece of the jigsaw, though there exist a few analyses on the market in favor of the base-generation view. In this section, I review several previous analyses of AT in Mandarin, and most of them argue for the base-generation account, though on different theoretical grounds. It is apparent that none of these analyses is able to account for the observations made in Section 2 but they provide insight into a semantic relation between AT and some constituent in the host clause.

3.2.1 Shi (1992)

Shi (1992) propounds that AT is derived via movement and subsequent deletion. As depicted in (102)b, after the NP *hua* undergoes raising to a topic position, and part of its base-generated constituent is strained and deleted.

(102) The derivation of AT via movement and deletion

- a. [_{TopP} Hua] (a), Zhangsan zui xihuan meiguohua.
 flower TOP Zhangsan most like rose
 ‘As for flowers, Zhangsan likes roses most.’
- b. [_{TopP} Hua] (a), [_{TP} Zhangsan zui [_{VP} xihuan
 flower TOP Zhangsan most like
 [~~hua zong de~~] meiguohua]].
 flower among-DE rose
-

Tempting as this analysis looks, there are some conceptual and empirical problems undermining the plausibility of Shi’s analysis. For instance, Huang et al. (2009) throws into doubt whether movement from within a nominal expression is operative in Mandarin. For another instance, Cheung (2008) is doubtful about the syntactic mechanism for forming the constituent *hua zong de meiguohua* within the VP, which is subject to PF deletion.

Despite these theory-internal downsides that render this analysis not advantageous, the analysis is still insightful in the way that it aims at ascribing the aboutness relation between AT and the object NP in the host clause to a syntactic structure that is merged at the outset of derivation, followed by movement and deletion. In addition, given this movement-cum-deletion analysis, it is predicted that AT might display certain island effects, which are indeed observed in Section 2.2, where I have shown NP AT (Type I) and VP AT (Type) exhibit \bar{A} -properties. As will become apparent in Chapter 3, the proposed analysis also readily captures this insight.

3.2.2 Xu (2006)

It is observed in Section 2 that AT occurs in the sentence-medial position, as shown in (103)a, stay within the TP-domain. Xu (2006) argues that the post-subject AT has to be base-generated, because it does not bear Accusative Case feature that has to be checked. As instantiated in (103)b, the verb only assigns Accusative to its object NP. If AT moves from the object position, it is not clear how it receives Accusative Case when in the sentence medial position. Xu further argues that if one insists that AT undergoes movement somewhere from the post-verbal position, it remains not clear what triggers such movement.

(103) AT in the sentence-medial position

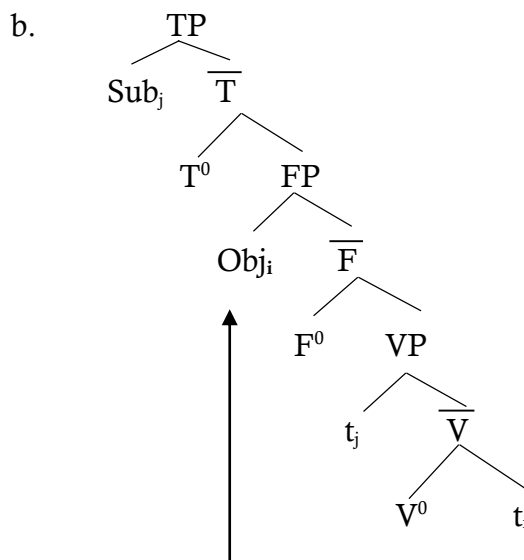
- a. Ta, [shuiguo]_{AT}, zui xihuan pingguo.
 he fruit most like apple
 ‘As for fruits, he likes apples most.’
- b. [TP Subj_{[FP} AT_[VP V⁰ NP]]]
-
- Assign Accusative*

Nevertheless, the second argument might not be as strong as it looks on both empirical and theoretical grounds. First, as proposed in Shyu (1995, 2001), object fronting to a TP-internal position is common in Mandarin, and this fronting is triggered to check the strong [+Focus] feature via Spec-Head agreement, as instantiated in (104)a-b. This view is also substantiated in Paul (2002, 2005), both of which argue that TP has an articulated structure on a par with that of CP, including TopP and FocP, which provide landing sites available for an attracted element. Badan (2007) argues for a fine-grained distinction between a high periphery (CP) and a low periphery (TP) of Italian and Chinese. Hsu (2012, 2014) also proposes the fine structure of IP in Mandarin in view of the fact that the topic NP and the focused NP can co-occur in the IP/TP domain. From a rather crosslinguistic perspective, in discussing the focus marker of Aghem, Aboh (2007) argue that ν P has an articulated left periphery that consists of TopP and FocP. The two positions are blind to the categorical status of elements that can be attracted there, the only condition being that they can be topicalized or focused. It follows that the positions are not related to case. Given these previous studies, there is ample reason to believe that there is a TP-internal

position serving as a landing site, characterizing A-movement (See [Shyu 2001](#)), as visualized in (104); namely, if everything is put on equal grounds, movement to a TP-internal position can be not case-driven. Furthermore, object shifting and scrambling, another syntactic manifestation of object movement, are not triggered without any reason. In discussing German OS and scrambling, [Broekhuis \(2016\)](#) points out that they are triggered for information structural reasons; the shifted object is shifted out of the lexical domain (ν P) to serve as topic/focus in a higher position.

(104) Object fronting in Mandarin

- a. Zhangsan yu_i chi-le t_i.
 Zhangsan fish eat-ASP
 ‘Zhangsan ate FISH.’



Second, the first argument is confronted with one accompanying problem. If case assignment can be taken to be evidence against the base generation account, it is not clear how the HD NP *Zhangsan* in (105) or AT in (103)a is case-assigned in the sense of the Case Filter ([Chomsky 1981](#)), because there is no apparent case assigner. [Li \(2000\)](#), for example, suggests that Mandarin entertains two ways of deriving topic structures, base generation and movement. It is apparent that Xu’s analysis excludes base generation.

(105) Left Dislocation in Mandarin

[Zhangsan]_i_{HD}, wo ting shuo ta_i bu xihuan Wangwu.
 Zhangsan I hear COMP he NEG like Wangwu
 ‘Zhangsan, I heard that he does not like Wangwu.’

3.2.3 Cheung (2008)

Cheung (2008) rejects the movement-cum-deletion analysis by arguing that if (102)a is derived from (102)b, where the NP *hua* is raised to [Spec, TP] and its base generation site is deleted, it is not clear where the NP *hua zong-de* ‘among flowers’ comes from. Another pressing problem, according to Cheung, is that this movement-cum-deletion analysis cannot account for the absence of reconstruction effects. See (106). According to Binding Condition A, as depicted in (106)b, the subject *Zhangsan* is able to serve the antecedent of the reflexive *taziji* ‘himself’ if the topic is the moved constituent, under the assumption that the moved NP undergoes reconstruction. Contrary to fact, (106)a shows that the reflexive is not properly bound by the subject *Zhangsan*.⁵³

(106)

- a. *[Ta-ziji de hua]_{TOP} (a), Zhangsan zui xihuan
 he-self DE flower Zhangsan most like
 meiguihua.
 rose
 ‘As for his flowers, Zhangsan likes roses most.’
- b. [_{TOP} Ta-ziji de hua]_{TOP}, [_{TP} Zhangsan zui xihuan
 [[~~ta-ziji de hua zhong de~~] meiguihua]]
-

Thus, based on the above facts, Cheung proposes that AT is externally merged in [Spec, TopP], as it correctly captures the absence of reconstruction effects in (106)a. To

⁵³ Nevertheless, to many native speakers of Mandarin I consulted, they consistently pointed out that the reflexive *tajizi* ‘himself’ has to be interpreted as co-referential with the matrix subject *Zhangsan*. In other words, granted such co-referential relation, reconstruction does take place.

capture the aboutness relation between AT and the remainder of the clause, Cheung proposes that the relation can be accounted for at LF, as illustrated in (107)b, by postulating that a free variable over relations, R , to nominals. (107)b says that *flowers* have the property of being an x such that *Zhangsan* likes roses and roses are related in the R -way to x .

(107) Cheung's (2008) proposed analysis of aboutness

- a. [_{TopP} hua], [_{TP} Zhangsan [_{VP} zui xihuan meiguihua]].
flower Zhangsan most like rose
'As for flowers, Zhangsan likes roses most.'
- b. flowers λx [like (Zhangsan, r) & R (r, x)]

On a side note, as added by Cheung (2008: 85, ft. 19), (107) is more advantageous to the pro analysis of AT. Following Tsai's (1997) discussion, Cheung points out that it is tempting to propose that AT is co-indexed with an in-situ pro that serves as a predicate variable to trigger predication, as visualized in (108). This configuration allows the host clause to be predicated of the base-generated AT. Cheung poses a problem with this pro analysis; the absence of a variable within the comment clause (TP) should trigger vacuous quantification, which is not desirable on theoretical grounds. Nevertheless, whether Cheung's critique is on the right track will be left aside for the time being.

(108) The hypothetical Pro analysis of AT

- [_{TopP} Hua_i [_{TP} Pro_i [_{TP} Zhangsan [_{VP} zui xihuan meiguihua]]]]
flowers Zhangsan most like rose
'As for flowers, Zhangsan likes roses most.'

3.2.4 Huang et al. (2009)

In view of the fact in (109) that the AT *shuiguo* 'fruit' can be separated by island boundaries⁵⁴; that is, there is some island violation induced. Huang et al. (2009), therefore, adopt a base-generation approach to the gapless topic structure. The gapless topic structure is interpreted according to aboutness; namely, the comment clause is about the topic.

⁵⁴ Nevertheless, (109) is judged as marginally accepted and even ungrammatical, according to the native speakers of Mandarin I consulted.

(109) Shuiguo, wo zui xihuan [bu pa chi xiangjiao de
fruit I most like NEG afraid eat banana DE
[ren]]
person
‘(As for) fruits, I like the most the person who is not afraid of eating bananas.’

They assume that aboutness exists in topic structures, and can be regarded a licensing relation between Topic and Comment without further ado. Nonetheless, as illustrated in Section 2, AT is allowed to be embedded in the TP domain, and it is not clear not how aboutness applies to license a Topic-Comment structure, as AT is embedded within Comment clause.

3.2.5 Jin (2014): A view from Generative Lexicon Theory

Within the framework of Generative Lexicon (GL) (Pustejovsky 1995), Jin proposes the licensing condition in (110).

(110) Licensing condition of the aboutness relation (Topic-Specific)

A comment is about a topic if the topic is a semantic argument of the predicate in the comment.

According to the GL theory, the NP *xianjiao* ‘banana’ in (111)a is the actual argument of the predicate *chi* but it has to be of the proper type to satisfy the predicate’s selectional requirements. Thus, the predicate *chi* ‘eat’ selects a sortal type, that is *shuiguo* ‘fruits’, and the complement NP *xianjiao* ‘bananas’ bears the subtype of that sortal type. To achieve this type shifting, a coercion operation must be activated in order to relate the type of the actual object to the lexically specified type, as represented in (111)b, which says that the verb *chi* ‘eat’ in (111)a does not directly subcategorize for the type of *bananas*, and, instead, it subcategorizes for the type *fruits*. *Bananas* has to participate in the eating event by shifting its type to its immediate supertype *fruits*.

- (111)a. Wo zui xihuan chi xianjiao (shuiguo).
 I most enjoy eat banana fruit
- b. Type coercion
 Θ [bananas \leq fruits]: bananas \rightarrow fruits
- c. Topicalization as a dynamic updating process
 [Shuiguo]_{TOP}, wo zui xihuan chi xianjiao.
 fruit I most like eat bananas

The interesting question is how the super-type NP *shuiguo* ‘fruits’ surfaces as a AT, located in [Spec, TopP] in the sense we have pursued so far. Jin suggests that topicalization can be regarded as a *dynamic updating process* in the sense that the ontological objects in the universe of discourse are stored as files related by properties. At any given point, there will be an *n*-predicative relation that needs *n*-objects as arguments within our attentional focus. The objects related by the predicate become salient in the discourse. A topic needs to be the discourse-salient referent about which a predicate specifies information. Following this line of reasoning, we can say that the notion of aboutness is derived via a process of the type coercion, and apparent topicalization of *shuiguo* ‘fruit’ is due to a need to trigger the salience of a referent in the discourse. It follows that aboutness has nothing to do with the topicality of ‘AT’.

Jin’s proposed analysis differs from the framework I adopt in this dissertation but there are two insights worth our attention. First, it is apparent that AT is related to the sub-categorization of a predicate, and the lexical relation between AT and its predicate associated at some point of composition. In discussing split topicalization in German, Ott (2011)⁵⁵ proposes that the relation between a dislocated NP (AT in our sense) and its associated NP in the host clause are merged as a complex predicate structure XP (bare predication), and the XP undergoes symmetry-breaking movement for the sake of labelling consideration in the syntactic computation. Second, it is admitted in Jin’s analysis that AT is not base-generated in a topic position but derived.

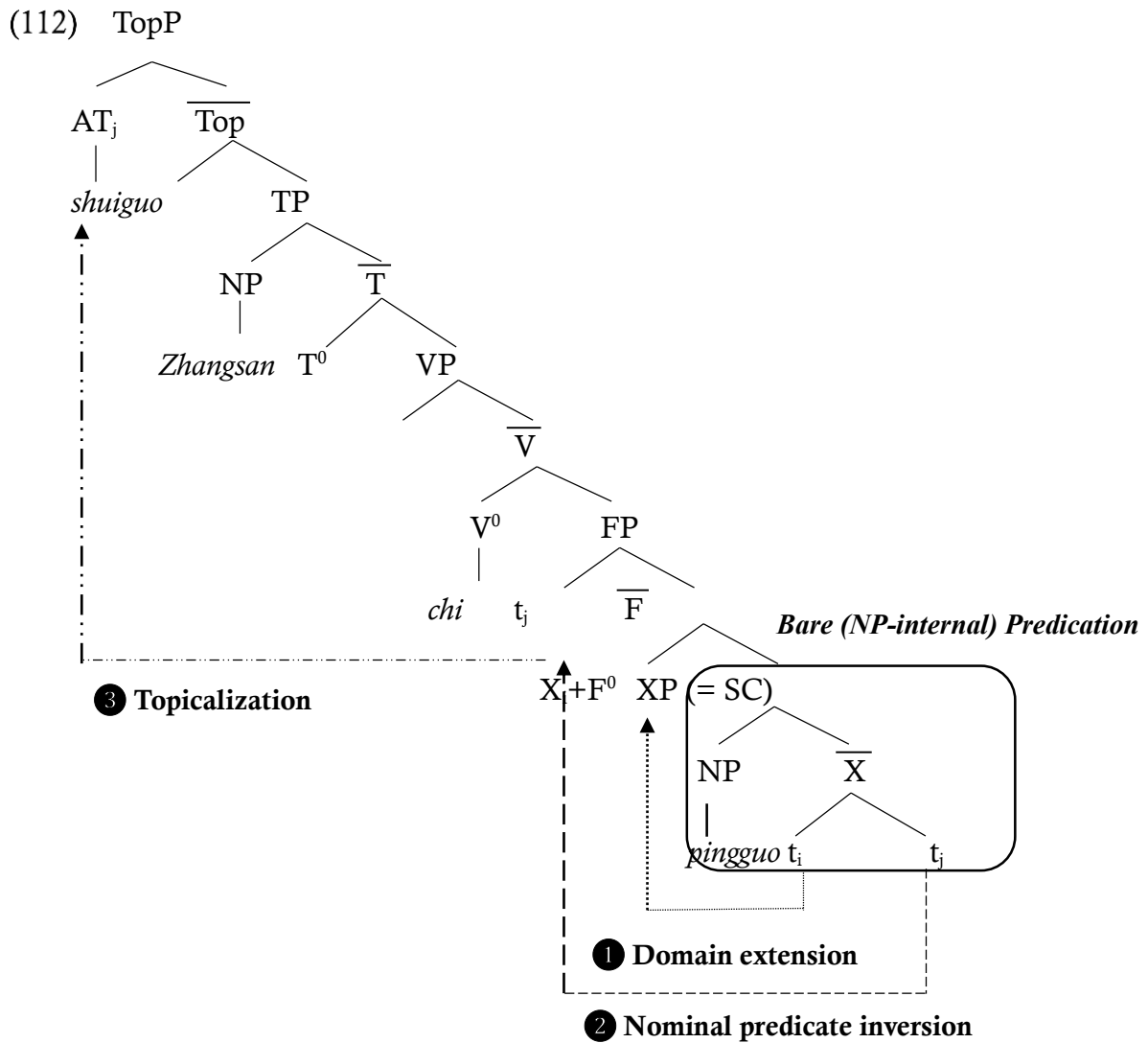
As the GL-based analysis differs from the framework I adopt in this dissertation, it is not clear to me how the observations in Section 2 can be accounted for by Jin’s analysis in a principled way.

⁵⁵ I will turn to Ott’s symmetry-breaking analysis in Chapter 3.

3.2.6 Jheng (2013, 2014): Predicate inversion analysis

To account for the island sensitivity effects surrounding AT, adopting the linker analysis (Bennis, Corver and den Dikken 1998), Jheng (2013, 2014) argues for a nominal predicate inversion analysis of AT. Precisely, AT is a nominal predicate moving out of a small clause where AT and an object NP constituent in the VP domain are merged by a null linker. (112) is the instantiation of his analysis.⁵⁶ It is shown that AT merges with a constituent NP to form a bare predicate complex (FP), before AT undergoes domain extension (Step 1) and topicalization (Step 2). The presence of the object NP in the host clause is a stranded NP at [Spec, XP], which is subcategorized for the verb *chi* 'eat'.

⁵⁶ Assumptions underlying the structure are spelled out as follows. First, Bennis et al. claim that the predicate inversion is characterized as A-movement of a predicate to [Spec, FP], around the position occupied by the predicate's subject. Nevertheless, this A-movement analysis of predicate inversion leads to potential problems of locality in the derivation, given that the fronted predicate necessarily crosses an intervening A-position (the position of the small clause (SC) subject), violating Relativized Minimality (Rizzi 1990) or disobeying a potential Minimal Link Condition (Chomsky 1993). To circumvent this violation, creation of equidistance is motivated. Bennis et al. suggest that the SC null head X^0 undergoes domain-extending head movement to a higher head (F^0) to create an equidistance configuration (FP). Thus, moving the X^0 up to F^0 creates the requisite minimal domain that contains both [Spec, XP] and the first available landing-site, [Spec, FP], for the moved predicate.



This predicate inversion analysis readily captures some intrinsic properties of AT. First, the \bar{A} -extracted AT is island-sensitive when it moves out of syntactic islands. Second, this analysis explains how AT is related to the constituent in the host clause in overt syntax without resorting to any covert/LF licensing mechanism (Cheung 2008; Pan and Hua 2008, among others)- AT and the constituent form a bare predicative structure XP before XP splits. Third, AT is able to undergo \bar{A} -movement out of FP to a higher position, and this predicts that there is more than one landing site, as evidenced in (113), where AT is located in the TP-domain topic position in (113)a, or the CP-domain one (113)b.

(113) The distribution of AT

a. AT in the TP-domain

| | | | | | |
|-----------|-----------------------|------|-------|----------|-------|
| Zhangsan, | [gou] _{AT} , | zui | xiang | lingyang | Bage. |
| Zhangsan | dog | most | want | adopt | pug |

‘Zhangsan, as for dogs, wants to adopt Pugs very much.’

b. AT in the CP-domain

| | | | | | |
|-----------------------|----------|------|-------|----------|------|
| [Gou] _{AT} , | Zhangsan | zui | xiang | lingyang | Bag. |
| dog | Zhangsan | most | want | adopt | pug |

‘As for dogs, Zhangsan wants to adopt Pugs very much.’

Nerveless, there remain some conceptual problems with Jheng’s analysis. First, Jheng observes that the stranded NP in the predicative complex is allowed to move out of the XP as long as its designated position is lower than that of AT, as evidenced by a pair of sentences in (114). Yet, this forces the formation of an illegitimate configuration, as schematized in (115); that is to say, movement of AT apparently violates the Shortest Move condition (Chomsky 1993). According to this condition, AT is forbidden to move across [Spec, FocP] and movement to [Spec, FocP] forms a shorter chain than that to [Spec, Top], instead.⁵⁷

(114)a. AT > Focus NP

| | | | | |
|-----------|-------------------------|-------|--|---------------------------|
| Zhangsan, | [shucaiat] _j | (ah), | (shi) | [gaolicai] _i , |
| Zhangsan | vegetable | (TOP) | (FOC) | cabbage |
| zui | xihuan | chi | [_{FP} t _i t _j]. | |
| most | like | eat | | |

‘As for vegetables, it is cabbages that Zhangsan likes to eat very much.’

b. *Focus NP > AT

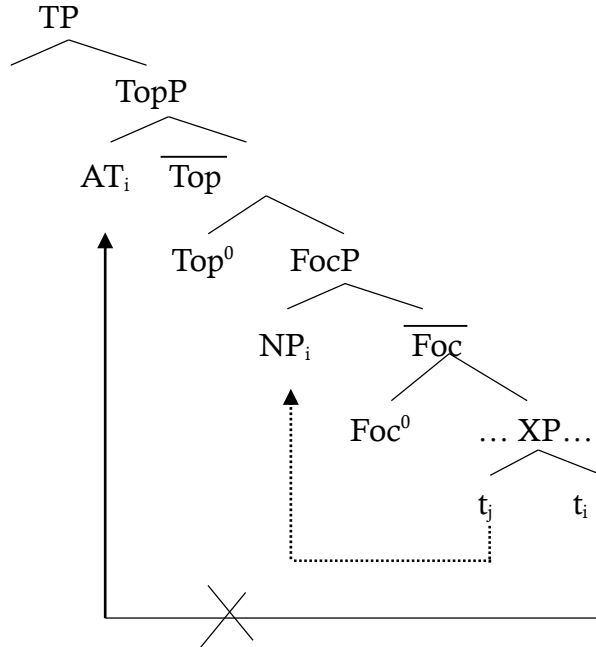
| | | | | |
|------------|-------------------------|-------|-------|-------------------------|
| *Zhangsan, | [gaolicai] _i | (ah), | (shi) | [shucaiat] _j |
| Zhangsan | cabbage | (TOP) | (FOC) | vegetable |

⁵⁷ However, this problem can be technically circumvented. For example, under the criterial view (Rizzi 2006), one option that I would like to pursue is that [+Focus] and [+Topic] are different features, and do not constitute legal interveners for each other. For concreteness, in deriving the word order in the Kwa languages where the verb precedes the focused NP, Aboh (2007) assumes that the focus head does not bear any tense/aspect features that can value the uninterpretable tense/aspect features on lexical verb. Therefore, the focus head does not serve as a proper landing site and count as a proper intervener. (i.) instantiates Aboh’s assumption here. It is shown that no intervention effect takes place when V⁰ moves across Foc⁰ to Asp⁰, as Foc⁰ does not bear any bear that blocks V⁰-movement.

(i.) ... [_{AspP} [_{Asp'} V_j+Asp⁰ [_{FocP} YP_[+Foc] [_{Foc'} Foc⁰_{OK} [_{VP} [_{V'} t_v t_{YP}]]]]]]

zui xihuan chi [FP t_i t_j].
 most like eat

(115) The movement of the stranded NP to [Spec, FocP] violates the Shortest Move



Second, under Jheng’s analysis, what triggers AT to split away first from XP is not directly stated. Following [Ott’s \(2011\)](#) insight, Jheng suggests that AT must respect a pragmatic constraint, *Generalized Aboutness Requirement* (116). This explains why AT must split away from the stranded NP in order to establish a Topic-Comment structure. The GAR is a pragmatic constraint, as pointed out by Ott, but how it interfaces with syntax in this regard is far from clear.

(116) Generalized Aboutness Requirement (GAR)

Topic and comment must be such that the comment about the topic.

([Ott 2011](#), p. 85, ex. 47)

Despite the downsides of Jheng’s analysis, it shares some insights of some previous studies. Similar to Jin’s LG-based analysis, AT is related to the NP in the host clause in more a direct way; in Jheng’s analysis, they are merged in the course of derivation, while, in Jin’s analysis, they are related by a process of type coercion and sub-categorized for by the verb.

3.2.7 Li (2000): Minimal effort

To reconcile two conflicting views on the derivation of topic structures in Mandarin, i.e. base generation and movement, Li (2000) suggests that the two operations are possible, depending on which operation manifests ‘least effort’. Li maintains that the derivation of topic structures in Mandarin serves as strong evidence in support of the notion of ‘least effort’ or ‘economy’ under the tenet of the MP: a shorter derivation is preferred to a longer one. The line of pursuit is that a given XP displays reconstruction effects, it is derived via movement, while a XP does not show reconstruction, the XP is base-generated. It follows that movement is a costly operation, compared with base generation, as it has to involve reconstruction.

For concreteness, as illustrated in (117), in order for the quantificational expressions *who* and *nobody* to bind the pronoun *ta* ‘he’, the pronoun must undergo reconstruction to the c-command domain of the expressions. Li contends that there is no inherent requirement for the pronoun to be bound, as the pronoun is already bound. Thus, reconstruction is not necessary. By contrast, as shown in (118)a, the reflexive *tajizi* can be bound by the matrix subject *Zhangsan* or the NP *laoshi* ‘teacher’, which is a proper c-commanding binder of the reflexive. Interestingly, if the topicalized NP should undergo reconstruction, which means it is a moved topic, it is predicted that the embedded subject *Lisi* should be a potential binder. The prediction is not confirmed. The absence of reconstruction is apparent. Nevertheless, in (118)b, the topicalized NP must undergo reconstruction in order for the reflexive *tajizi* to be bound by the NP *Daxingxing*.

(117) The absence of reconstruction in topic structures

- a. Laoshi gei ta_i de chengji, shei_i xihuan.
teacher give he DE grade who like
‘The grade that the teacher gave to him, who likes?’
- b. Laoshi gei ta_i de chengji, meiren_i xihuan.
teacher give he DE grade everyone like
‘The grade that the teacher gave to him, nobody likes.’

(Li 2000, p. 11, ex. 17c, d)

(118) The absence/presence of reconstruction in topic structures

- a. Zhangsan_i yiwei [laoshi_j gei ziji_{i/j/*k} de chenggji]_x, Lisi_k
Zhangsan think teacher give self DE grade Lisi
kandao-le t_x.
see-ASP

‘Zhangsan thought that, the grade that the teacher gave to self, Lisi saw.’

(Li 2000, p. 9, ex. 15)

- b. Tamen mengjian, [tajizi_i de erduo], Daxingxing mo-zhe t_i.
they dream himself DE ear Big Gorilla touch-ASP

‘They dreamed that himself’s ear, Big Gorilla is touching.’

(Li 2000, p. 9, ex. 16c. Glosses are mine)

Building on the asymmetry between (118)a and (118)b, Li argues that movement is adopted, when reconstruction occurs, and otherwise, not, in lines with the view that Mandarin displays the properties manifesting the notion of ‘least effort’ in the area of movement and reconstruction: whenever there is a choice, non-application of reconstruction/movement is adopted. An accompanying question is why such choice exists in Mandarin. Li suggests that when there are two options to interpret a topic structure, the one with less effort, i.e. the one without movement, is favored and adopted.

Granted Li’s view, it follows that AT involves movement, because it displays reconstruction effects, as evident in Section 2.

3.3 Summary

In this section, I have reviewed several previous studies concerned with the distribution and the derivation of AT. Two consensuses are arrived at. First, there can be more one position designated for topics in the left periphery of CP and these topics have to be arranged hierarchically in the CP layer. AT is the highest one. Second, whether NP AT (Type I) is an extracted constituent or a base-generated one has not been settled in the previous studies, as summarized in Table 3. Nonetheless, it is clear from Section 2.2 that there are three types of AT in Mandarin, and the previous studies in Table 3 do not pay attention to VP AT (Type II) and VP AT(AT III). Besides, NP AT (Type I) and VP AT

(Type II) display \bar{A} - and A-properties, and lexical identity effects that pave the way for the plausibility of a movement approach.

Table 3. Summary of the derivation of AT in Section 3.2

| | Base generation | Movement |
|---------------------|-----------------|----------|
| Shi (1992) | X | ✓ |
| Xu (2006) | ✓ | X |
| Cheung (2008) | ✓ | X |
| Huang et al. (2009) | ✓ | X |
| Jin (2015) | X | ✓ |
| Jheng (2013, 2014) | X | ✓ |
| Li (2000) | ✓ | X |

3.4 A criterial view of scope-semantics: \bar{A} -movement of topic

The preceding section has shown that AT incarnates a Topic-Comment partition, which can be regarded as an output from the syntax-discourse mapping process. Evidence for movement shows in Section 2.2 further shows that syntactic operations play a role. Nonetheless, movement takes place without no reason. Broekhuis (2016) points out that the object can be shifted (object shifting) or scrambled (scrambling) out of the lexical domain (ν P) in order to receive particular informational structural interpretation, under the assumption that a shifted/scrambled object is part of the presupposition of the clause and cannot encode new information. This is formalized as *effects on output*.⁵⁸ Now, the question has been boiled down to the relation between movement and information structural interpretations.

It has been widely assumed that \bar{A} -movement contributes to interface properties, particularly scope-semantic properties, such as interrogatives, topic, focus, exclamatives,

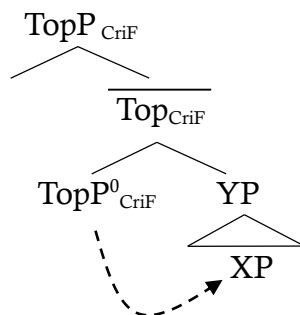
⁵⁸ A similar view is advanced in Laenzlinger and Soare (2005), as formalized in (i.). It accounts for the fact that both the subject and the object undergo movement out of the VP domain to their Case checking positions.

(i.) VP full interpretation principle
All arguments must leave the ν P domain in order to have their A- and I-features matched/assigned a value (previously checked) in the overt syntax.

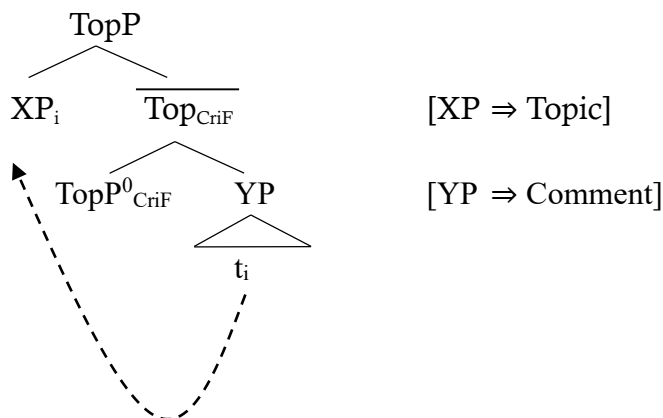
etc. (Rizzi 1997). Rizzi (2006) maintains that \bar{A} -movement is associated with interpretative properties triggered to satisfy criterial features. For concreteness, X_{criF} is part of the numeration and triggers an internal search for XP_{criF} ; subsequently, XP_{criF} undergoes internal merge/ \bar{A} -movement to $[\text{Spec}, XP_{\text{criF}}]$. As instantiated in (119), suppose that TopP^0 is endowed with a criterial feature ($_{\text{criF}}$), say $\text{TopP}^0_{\text{criF}}$, and is a Criterial Probe. It searches for Criterial Goal (XP), which carries the same feature, in its c-command domain. Ultimately, after an *Agree* relation is established, Criterial Goal (XP) is internally merged at $[\text{Spec}, \text{TopP}_{\text{criF}}]$. $\text{TopP}^0_{\text{criF}}$ carries explicit instructions on how its dependents are interpreted by the CI and AP system ($XP \Rightarrow \text{Topic}$; $YP \Rightarrow \text{Comment}$). Once XP is at $[\text{Spec}, \text{TopP}_{\text{criF}}]$, its crucial feature is frozen in place and it cannot undergo further internal merge, according to *Criterial Freezing* in (120).

(119) The transparent mapping between syntax and interpretation of Top and Comment

a. Probe-Goal Agree



b. Internal Merge



(120) Criterial Freezing

In a criteria configuration, the Criterial Goal is frozen in place.

The criterion-based view of movement shows that movement is a scope-taking operation in overt syntax, and this is motivated to check off the criterial feature on TopP^0 .

It should be noted that what underlies the operation in point is that the scope-taking properties is already embodied by a functional projection, TopP, merged in the left periphery of the CP layer.

Yet, another question is whether the mapping process in (119) is able to take place in any position along the clausal spine of CP and TP, as it has been observed in Section 2.3.1, Section 2.3.2 and Section 2.3.3 that the distribution of AT is free in the sense that it can occur in the CP layer and the TP layer as long as another F-constituent is within its scope.

4. Conclusion

In this chapter, I have adduced diagnostic evidence for the three types of AT in Mandarin (Section 2). Though having the similar distribution (Section 2.3), they exhibit disparate \bar{A} -properties (Section 2.2). NP AT (Type I) and VP AT (Type II) are arguably the extracted constituent, while VP AT (Type III) is the base-generated constituent. In addition, I have reviewed the previous studies concerned with the distribution of AT (Section 3.1), and a consensual view is that AT is the highest topic among a layer of topics in the left periphery of CP. Nevertheless, the evidence from the distribution of adverbs and modals (Section 2.3.1 and 2.3.2) has shown that AT can occur in any position along the clausal spine of the CP layer and the TP layer, which amounts to the absence of a designated position of AT.

To add complications to the distribution, AT is freely able to occur in the left peripheral position of adverbial clauses and clausal complements, which are claimed to be ‘truncated/reduced’ in the sense of Haegeman (2006a, 2006b) in some languages. AT plays a role in contributing to the integration of syntactic structure (utterance) into the discourse (Molnár and Winkler 2010) (Section 2.1), and it is not clear whether this syntax-discourse mapping can be substantiated in the TP layer as well as the truncated functional structure of the CP. In addition, the base generation-movement paradox with respect to the derivation of AT remains unsolved in the previous studies (Section 3.2). In Chapter 3, I argue that the three types of AT in Mandarin can be accounted for under the same set of principles and operations at the syntax-discourse interface.

3 The Syntax of Aboutness

Topic: Split and Non-Split Topicalization

1. Setting the stage: Rethinking Aboutness Topic

It has been concluded from Chapter 2 that there are three types of AT in Mandarin, as summarized in (1). It is also shown that the syntactic behaviors of (1)a and (1)b are identical, exhibiting a mixture of \bar{A} - and A-properties. A primary distinction between them is that only VP AT (Type II) strictly enforces lexical identity effects, according to which the verb in VP AT is obligatorily identical to the one in the main VP. In addition, as (1)a and (1)b show, NP₁ is closely connected to NP₂, displaying certain connectedness, which is interpreted as a set-member relation (Pan and Hu 2002, 2008), a hypernym-hyponym relation and a predicative relation (Jheng 2013, 2014). VP AT (Type III) lacks these properties, however. Thus, the guiding intuition suggests that NP AT (Type I) and VP AT (Type II) can be regarded as the same type, whereas VP AT (Type III) represents another type. Furthermore, the role of the F-constituent in the host clause with respect to AT is less discussed in Chapter 2, which I argue sheds light on the underlying structure of AT and will be underscored in this chapter.

(1) Syntactic configurations of the three types of AT

- a. NP AT (Type I)
[NP₁]^{AT} ... [NP₂]^{FOC}

- b. VP AT (Type II)
 $[_{VP} \text{Verb-NP}_1]^{AT} \dots [_{VP} \text{Verb-NP}_2]^{FOC}$
- c. VP AT (Type III)
 $[_{VP}_1]^{AT} \dots [_{VP}_2]^{FOC}$

Nevertheless, before proceeding to an alternative view of analyzing AT, I first suggest that the term ‘aboutness topic’ is a misconception on both empirical and theoretical grounds. Thus, it is necessary to replace the notion with a precise characterization of aboutness.

It has been shown from Section 3.2 in Chapter 2, AT does not have a fixed position, and it freely occurs in the left periphery of CP and ν P, usually accompanied by a F-constituent. For example, [Badan and Del Gobbo \(2011\)](#) propose a fine structure of CP in Mandarin based on the ordering restrictions imposed diverse kinds of topic, as illustrated in (2).

- (2) The left periphery of CP ([Badan and Del Gobbo 2011](#))
- Aboutness Topic > Hanging Topic > Left Dislocation Topic > *lian*-Focus > IP
-
- Topic field*
Focus field

[Cheung \(2013\)](#), however, claims that Badan and Del Gobbo’s proposed hierarchy is not empirically correct. First, LD in Badan and Del Gobbo’s hierarchy is posited for hosting dislocated elements from the host clause, yielding the gapped topic structure. As pointed out by Cheung, it is not clear why the dislocated PP *zai tushu guan* ‘in the library’ cannot precede the dislocated NP, even if the NP *Zhangsan* and the PP *zai tushuguan* ‘in the library’ are dislocated materials, as evident in (3).⁵⁹

- (3) The displaced NP has to precede The displaced PP
- a. $[_{NP} \text{Zhangsan}]_j$ ah, $[_{PP} \text{zai tushuguan}]_i$, wo t_i pengjian-guo t_j
- Zhangsan TOP in library I meet-ASP

⁵⁹ However, the contrast between (3)a and (3)b is not as sharp as claimed by Cheung, according to the speakers of Mandarin I consulted.

hen duo ci.
 very many times
 ‘Zhangsan, in the library, I met many times.’

- b. *[_{PP} zai tushuguan]_i, [_{NP} Zhangsan]_j ah, wo t_i pengjian-guo t_j
 in library Zhangsan TOP I meet-ASP
 hen duo ci.
 very many times

Intended ⇒ ‘In the library, Zhangsan, I met many times.’

(Cheung 2013, p.12, ex. 8a-b)

Second, Badan and Del Gobbo argue that LD is recursive⁶⁰, while HT is not, as shown in (4)b. Cheung points out that both (4)a-b are not accepted by the native speakers of Mandarin. Rather, Cheung observes that HT in Badan and Del Gobbo’s sense has to precede the dislocated PP, as evident in (5)a-b.⁶¹

(4) LD topic is recursive while HT is not recursive.

- a. Zhangsan_i, [Lisi han Xiaoyu]_j, t_i zai tushuguan kanjian t_j.
 Zhangsan Lisi and Xiaoyu in library see
 ‘Zhangsan, Lisi and Xiaoyu, he saw them in the library.’
- b. *Zhangsan_i, [Lisi han Xiaoyu]_j, ta_i zai tushuguan kanjian
 Zhangsan Lisi and Xiaoyu he in library see
 tamen_j.
 them
 ‘Zhangsan, Lisi and Xiaoyu, he saw them in the library.’

(Badan & Del Gobbo 2011, p. 75)

(5) HT has to precede the dislocated PP

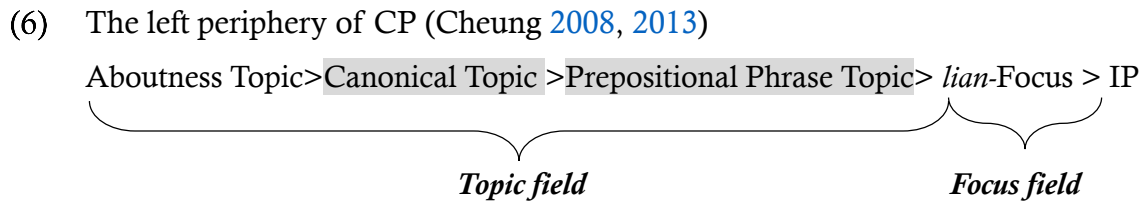
- a. Zhangsan_i ah, [_{PP} zai tushuguan]_j, wo t_j pengjian-guo ta_i.
 Zhangsan TOP in library I meet-ASP he
 ‘Zhangsan, in the library, I met him.’
- b. *[_{PP} Zai tushuguan]_j, Zhangsan_i ah, wo t_j pengjian-guo ta_i.

⁶⁰ According to Badan and Del Gobbo (2011), a major difference between LD topic and HT is that the latter does not create a gap in the host clause, and is linked to a reumptive pronoun in the clause, while LD leaves an associated gap in the host clause. See Section 3.1.2 in Chapter 2 for discussion.

⁶¹ To many native speakers of Mandarin I consulted, (4)a-b are not acceptable, however.

in library Zhangsan TOP I meet-ASP he
 (Cheung 2013, p.12, ex. 10a-b)

Given the above observations, Cheung proposes another refined version of the CP left periphery in Mandarin, as visualized in (6), showing that there is a canonical position for dislocated NPs, followed by another position reserved for the host dislocated PP.⁶²



Nevertheless, granted either Badan and Del Gobbo’s (2011) or Cheung’s (2013) proposed hierarchy of topics in the CP periphery, AT is posited in the highest position. Recall the discussion from Section 2.3 in Chapter 2. It is apparent that the distribution of AT is not restricted to the highest position in the CP periphery, even in Cheung’s proposed left periphery of CP in Mandarin, as evident in (7).

(7) The distribution of AT is not restricted in Cheung’s proposed left periphery of CP

a. Canonical Topic > PP Topic > Aboutness Topic

Zhangsan_i ah, [_{PP} zai canting]_j, [haixian]^{AT}, ta bu chi xiazi.
 Zhangsan TOP in restaurant seafood he NEG eat shrimp
 ‘Zhangsan, in the restaurant, as for seafood, he does not eat shrimps.’

b. Aboutness Topic > Canonical Topic > PP Topic

[Haixian]^{AT}, Zhangsan_i ah, [_{PP} zai canting]_j, ta bu chi xiazi.

⁶² Wei-wen Roger Liao (pc.) offers an interesting example, and, if held on empirical grounds, it counterexamples Cheung’s proposed hierarchy, as evident in (i.), where the *lian*-phrase apparently targets a position higher than the canonical topic. However, there might be complications concerning whether the *lian*-phrase can be analyzed as a focus when in a position higher than a topic. I leave this issue for further research.

(i.) *Lian*-focus > Canonical topic
 [lian ziji de xiaohai], [lingyongqian], Zhangsan dou bu gei le,
 EVEN self DE child allowance Zhangsan all NEG give SFP
 genghekuang juan qian gei bie ren.
 not to mention donate money give other people
 ‘The allowance, Zhangsan does not give it to even his children, not to mention donating money to other people.’

seafood Zhangsan TOP in restaurant he NEG eat shrimp
 ‘As for seafood, Zhangsan, in the restaurant, he does not eat shrimps.’

c. Canonical Topic > Aboutness Topic > PP Topic

Zhangsan_i ah, [haixian]^{AT}, [PP zai canting]_j, ta bu chi xiazi.
 Zhangsan TOP seafood in restaurant he NEG eat shrimp
 ‘Zhangsan, as for seafood, in the restaurant, he does not eat shrimps.’

The above discussion has shown that the postulation of AT in the highest position in a layer of topics in the CP is not sustained. Though the proposed hierarchy in (6) readily captures the recursive nature of topic projections, as argued in Rizzi (1997), there is ample empirical evidence showing that the position of AT is not fixed.

In addition to the empirical problem stated above, a conceptual problem related to AT is the definition of aboutness topic, which is defined at a rather ‘intuitive’ level. That is, a topic is related to some constituent in the host clause in terms of aboutness (Cheung 2008; Pan and Hu 2002, 2008; Badan and Del Gobbo 2011; Jin 2015, a.o.) or is about the comment (Li and Thompson 1976, 1981; Huang Li and Li 2009, a.o.). Surely, this definitional misconception does not only occur to AT itself. More precisely, it is shown in the previous scholarship that the nature of topics can be syntactically, semantically or discoursally defined. For example, topics are defined differently in Cheung’s system in (6). Canonical Topic and PP Topic are categorially defined, though they provide landing sites for dislocated materials,⁶³ while Aboutness Topic is not defined this way. For another example, topics in Badan and Del Gobbo’s system in (2) are defined in terms of how topic is associated with some constituent in the host clause: Hanging Topic (HT) is defined in a sense that topic is related to the resumptive pronoun in the host clause, while Left Dislocation (LD) Topic is defined by a topic related to a gap in the host clause. It follows that LD predicts the gapped topic structure, while HT predicts the gapless topic structure. In this view, HT cannot be distinguished from AT, the latter representing another instance of the gapless topic structure. Pan and Hu (2008) point out that Hanging Topic or Dangling Topic is commonly used to instantiate the gapless topic structure, in which topics are not subcategorized by the verb, and cannot be identified by a syntactic element inside the comment. It is obvious that HT in Badan and Del Gobbo’s sense is different from that

⁶³ For sure, another problem that needs to be addressed is whether topic can be categorially specified. In other words, topic only attracts a constituent that is specified [\pm verb] or [\pm noun].

defined in Pan and Hu, because HT in the former can be identified by a resumptive pronoun in the host clause, while that in the latter is not defined this way. In addition, AT in Pan and Hu's system is defined as Dangling Topic, and the notion of aboutness has to do with a semantic licensing condition and does not pertain to any structural position. Besides, interpreted in [Shi's \(2000\)](#) and [Ting & Huang's \(2006\)](#) analysis, the sentence-initial NP *GaoQiang* co-referential with the pronoun *ta* 'he' in (8) is a Dangling Topic, corresponding to HT in Badan and Del Gobbo's system. Nevertheless, another type of Dangling Topic is represented in (9), where the sentence-initial topic does not relate to any material in the host clause. (8) and (9) are the instances of Dangling Topic but Dangling Topic in (8) is related by resorting to a resumptive strategy, whereas Dangling Topic in (9) is devoid of any syntactic integration into the host clause.

(8) Dangling Topic in [Shi's \(2000\)](#) and [Ting & Huang's \(2006\)](#) system

GaoQiang_i na, ZhouHua weile ta_i mei lai zheng shengqi ne.
 GaoQiang PART ZhouHua because he not come just mad SFP
 'As for GaoQiang, ZhouHua is being mad because he did not come.'

(9) Dangling Topic ([Li and Thompson 1981](#); [Tsao 1990](#); [Huang 1994](#), etc.)

Na-chang da-huo (a), xingkui xiaofangdui lai-DE-kuai.
 that-CL big-fire TOP luckily fire brigade come-RESULT-fast
 'As for that big fire, luckily, the fire brigade came quickly.'

Table 3 offers an overview of types of topic and how they are defined in the previous studies. A word of reminder is that *N./A.* simply means that a given topic is not discussed or subsumed under another type of topic. For instance, [Ting & Huang \(2006\)](#) only distinguish Dangling Topics from Non-Dangling Topics- The former suggests that topic cannot be structurally integrated into the comment structure but can be related to a constituent in the comment by resorting to a resumptive strategy, as shown in (8), while the latter allows topic to be integrated into the comment clause in the manner of creating gaps. In this sense, Non-Dangling Topics already include Canonical topic, LD and PP topic in Cheung's sense.

Table 4. An overview of types of topic

| Types | Aboutness Topic | Hanging Topic | Dangling Topic | Left Dislocation Topic | Canonical Topic | Prepositional Phrase Topic |
|----------------------------|-----------------|---------------|----------------|------------------------|-----------------|----------------------------|
| Defined | | | | | | |
| Badan and Del Gobbo (2011) | Semantically | Structurally | N./A. | Structurally | N./A. | N./A. |
| Cheung (2013) | Semantically | N./A. | N./A. | N./A. | Categorially | Categorially |
| Huang, et al. (2009) | Semantically | N./A. | N./A. | N./A. | Structurally | N./A. |
| Ting and Huang (2006) | N./A. | N./A. | Structurally | N./A. | N./A. | N./A. |

The above discussion suggests that AT is defined as a result of aboutness between a topic and some constituent, and it does not pertain to the nature of topic itself. As discussed in Section 1 of Chapter 2, the notion of aboutness is defined in a way to capture one’s intuition about the relation between topic and a constituent in the host clause. This leads several scholars to postulate an independent designated position for AT in the left periphery of CP in Mandarin, and based on the ordering restriction, it is therefore posited in the highest position in a layer of topics in Mandarin. However, the position does not say anything about the interpretation of AT. For instance, AT can be a contrastive topic, as evident in (10) and (11). Note that even though AT NP in (10) receives a contrastive interpretation, it is still semantically related to the NP *gaolicai* in the sense of aboutness defined in previous studies. The line of thinking also applies to the NP in VP AT (Type II) in (11). If a topic can be semantically defined, shall we postulate Contrastive Aboutness Topic as an extended functional projection in the left periphery?

(10) Contrastive interpretation of NP AT (Type I)

[Cai]^{CT}, Zhangsan xihuan chi [gaolicai]^{FOC}, [tang]^{CT}, ta
vegetables Zhangsan like eat cabbages soup he
xihuan he [yuminongtang]_{FOC}.
like drink Corn soup

‘As for vegetables, Zhangsan likes to eat cabbages, but as for soups, he likes to drink corn soups.’

(11) Contrastive interpretation of VP AT (Type II)

[_{VP} Chi cai]^{CT}, Zhangsan xihuan [_{VP} chi gaolicai]_{FOC},
eat vegetable Zhangsan like eat cabbages
[_{VP} he tang]^{CT} ta xihuan [_{VP} he Yuminong tang]_{FOC}.
drink soup he like drink Corn soup

‘As for eating vegetables, Zhangsan likes to eat cabbages, but as for drinking soups, he likes to drink corn soups.’

To circumvent the notational complexity, I adopt [Hu and Pan’s \(2008\)](#) view in differentiating between two types of topic structure, the gapped topic structure and the gapless topic structure. In the former, the topic X denotes an identity of Y, and this identity-denoting topic structure involves the gapped or movement-driven topic. Namely, the topic is able to find an associated gap in the host clause, and the topic merely represents an identity of the NP in the host clause that is already subject to deletion on the surface. In contrast, in the latter, the topic denotes the property of Y, and it yields the dangling or non-gapped structure. From a semantic perspective, the gapped topic structure is an identificational predication, while the gapless one is a property-denoting predication. In this chapter, I will show that analyzed as a type of the gapless topic structure, AT can be regarded as a property-denoting predication but its syntax will explicate how the predication is formed in the course of derivation, and why a F-construction is involved in triggering the presence of AT. Though it is shown that the term ‘AT’ *per se* is loosely defined, I will use it in the following sections simply for the sake of consistency and discussion.

In this chapter, I propose a novel analysis of AT by arguing that NP AT (Type I) and VP AT (Type II) are instances of Split Topicalization (ST), and their differences pertain to the spell-out of strong formal features along the line of Distributed Deletion (DD) analysis ([Fanselow and Cavár 2002](#)). By contrast, VP AT (Type III) represents an instance of Non-Split Topicalization and is derived by means of external merge (base generation).

This chapter is structured as follows. In Section 2, I will start with an alternative view of analyzing AT in Mandarin by looking at XP-split constructions in German, and claim that this comparative view is able to show that AT represents an instance of split and non-split construction. Section 3 offers a more detailed look at the information structural roles of AT and the F-constituent, and endorses the view that AT is analyzed as CORE and the

F-constituent as REM. In Section 4, I review several alternative analyses that seem plausible in accounting for AT in Mandarin at first glance, but these analyses cannot be sustained on empirical grounds. I will present my proposed system, primarily following the Distributed Deletion (DD) analysis (Fanselow and Cavár 2002) and the bare predicative analysis (Jheng 2013, 2014), in Section 5. In Section 6, I illustrate the derivation of the three types of AT within the same set of principles in the proposed system. I will conclude this chapter by discussing implications arising from the proposed system for the syntax-discourse interface.

2. A view from XP-split constructions

A proper analysis has to capture two core properties of AT. First, island effects and lexical identity effects of NP AT (Type I) and VP AT (Type II) indicate that AT, if merging with a constituent to form a complex NP at the outset of derivation, undergoes sub-extraction to a higher position in the course of derivation. This sub-extraction thus gives rise to the occurrence of two autonomous objects (XP and YP) in two positions, as visualized in (12). Given this hypothetical derivation, we need to explain what drives sub-extraction and how two autonomous objects receive disparate information-structural interpretations after sub-extraction takes place. An accompanying question is how to account for the absence of \bar{A} -properties and lexical identity effects of VP AT (Type III) and operations manipulated by the computation system so as to derive two types of AT. Second, as long as the AT-FOCUS dependency is respected, AT and the F-constituent can be located ex-situ along the clausal spine of ν P and CP, altogether or separately. This poses a grave problem as to whether the distribution is closely pertinent to the left periphery of ν P and CP, in which TopP is recursive under the cartographic approach (Rizzi 1997; Cinque 1999), or a rule mapping process (Neelman and van Koot 2008) taking place at the syntax-discourse interface.

(12) Hypothetical derivation of NP AT (Type I) and VP AT (Type II)

- a. Merge at the outset of derivation

[XP YP]

- b. Sub-extraction

[XP_i]^{AT} [t_i [YP]^{FOC}]



In what follows, I set out with an alternative view of analyzing AT as a type of split construction, precisely split topicalization (ST) common in many Germanic languages (See [van Hoof 2005](#) for a comprehensive survey of ST). This alternative view is able to offer insight into the syntax of AT in Mandarin. I also bring up a discussion for an affinity between AT and the F-constituent that can be analyzed on a par with connectedness effects between CORE and REM in XP-split constructions.

Split Topicalization (ST),⁶⁴ primarily discussed in German ([Fanselow 1987](#); [Fanselow and Cavar 2002](#); [van Hoof 1997a, 1997b, 2005](#), [Ott 2011, 2015](#), a.o.), is a phenomenon in (13), where part of a constituent, called CORE *Raubvögel*, is topicalized to the left periphery with the residual part, REM(ainder) *bussarde*, being stranded.

(13) Split topicalization in German

[Raubvögel]_{CORE} glaube ich kennt Gereon nur [Bussarde]_{REM}.
 birds of prey believe 1.SG know Gereon only buzzards
 ‘As for birds of prey, Gereon knows only Buzzards.’

It is noted that CORE evokes a set of (kind) alternatives (a set of prey birds), and REM *bussarde* ‘buzzards’ is one of the (kind) alternatives. As discussed in [Fanselow and Cavar \(2002\)](#), this type of split construction is endowed with a particular pragmatic structure- The right part of XP must be focal, while the lefthand part is a link topic or a second focus. This co-occurrence is defined as pragmatic constraints or ordering in the sense that the XP-split construction is grammatical if a single XP must fulfill two different positional requirements. For concreteness, suppose CORE and REM form a XP, each of them bearing different formal features [+Topic] and [+Focus] to be checked respectively. [+Topic] requires XP to be overtly realized in position A, while [+Focus] forces XP into position B, as instantiated in (14)a. Nevertheless, the resulting legitimate structure is (14)b, where CORE in the lower XP and REM in the higher XP respectively disappear for some unknown. Though the hypothetical derivation in (14)a offers a straightforward explanation for connectedness effects between CORE and REM, it raises another puzzle regarding what guides a deletion operation, if there is, that targets particular constituents.

⁶⁴ More precisely, (13) is called multiple NP splits ([Ott 2009](#)).

(14) Hypothetical derivation of the XP-split construction

- a. [^A[_{XP} CORE^{TOP} REM^{FOC}].....^B[_{XP} CORE^{TOP} REM^{FOC}]]
- b. [^A[_{XP} CORE^{TOP}].....^B[_{XP} REM^{FOC}]]

German Multiple NP-splits (15)a exemplifies (14)b. Adopting Fanselow and Cavár's (2002) Distributed Deletion (DD) approach, Ott (2009) argues that the negation *keine* and the NP *bücher* 'books' are merged as a complex NP at the outset of derivation but they are 'pronounced' in different positions, as instantiated in (15)b.

(15) Multiple NP-splits in German (Ott 2009)

- a. Bücher^{TOP} hat er keine^{FOC} gelesen.
Books has he no read
'As for books, he hasn't read any.'
- b. [_{CP}[_{NP} ~~keine~~ Bücher_{TOP}]]..... [_{NP} keine_{FOC} ~~Bücher~~]

Several analyses have been proposed to account for such XP-split construction, including the regeneration account (van Riemsdijk 1989), the distributed deletion approach (Fanselow and Cavár 2002), the symmetry-breaking analysis (Ott 2011), etc. (see Van Hoof (2005) for a survey of ST in other languages).⁶⁵ A burning issue that has not been settled is whether CORE and REM are merged as two independently autonomous constituents (the base-generation view), or CORE is discontinuously separated from REM to satisfy certain syntactic operations or to establish proper information structure (the \bar{A} -movement view). This issue is reminiscent of the split topic paradox (see van Hoof 1997a, b). What's more, granted either view, an accompanying question is what licenses the relation between CORE and REM, giving rise to connectedness effects.

Summarizing, it is apparent that the above two issues regarding the derivation of ST, the base generation-movement paradox and connectedness effects, are in parallel with the perplexing puzzles that remain to be solved for AT.

⁶⁵ Ott (2011) offers a trenchant critique of the existing approaches to split constructions in German. However, diverse morphological changes are specific to German, and are not observable in Mandarin. I will not reproduce his arguments here.

3. TOP-REM asymmetry

In this section, I will elaborate the notion of ST, corroborating the strong affinity between ST and AT, by discussing the meaning and form of AT, which is rigidly constrained. For the sake of discussion, let's assume the schematizations in (16).⁶⁶ (17) exemplify the schematizations. It is assumed that CORE is connected to REM in a more direct way. In (16)a, NP AT is CORE, and it has a semantic relation with REM in the VP; for instance, the AT *shuiguo* 'fruit' is a property-denoting expression or a hypernym of the F-constituent *pingguo* 'apple', which is REM. By contrast, in (16)b, VP AT contains CORE, and the VP F-constituent contains REM. In VP AT (Type II), VP AT is identical to the F-domain that includes the VP. In the following discussion, I will illustrate a set of distinctive features of CORE and REM.

(16) The hypothetical schematization of NP AT (Type I) and VP (Type II)

a. NP AT (Type I)

[_{NP} CORE]^{AT} ... [_{VP} [_{NP} REM]^{FOC}]

b. VP AT (Type II)

[_{VP} [_{NP} CORE]]^{AT} ... [_{VP} [_{NP} REM]]^{FOC}

(17) Examples of NP AT (Type I) and VP AT (Type II)

a. NP AT (Type I) [= (16)a]

[_{NP} Shuiguo_{CORE}]^{AT}, Zhangsan zui ai chi [[_{NP} pingguo]_{REM}]^{FOC}.
fruit, Zhangsan most like eat apple

'As for fruits, Zhangsan likes to eat apples very much.'

b. VP AT (Type II) [= (16)b]

[_{VP} Chi [_{NP} shuiguo]_{CORE}]^{AT}, Zhangsan ai [_{VP} chi [_{NP} pingguo]_{REM}]^{FOC}.
eat fruit, Zhangsan like eat apple

'As for eating fruits, Zhangsan likes to eat apples very much.'

CORE displays two distinctive empirical properties distinguishing itself from REM. First, CORE has to be plural. (18)a shows that CORE cannot be a quantified NP, and it cannot be an definite singular noun in (18)b. In (18)c, CORE can be a plural definite NP

⁶⁶ I will discuss VP AT (Type III) later.

accompanied by the demonstrative and the classifier. In (18)d, AT is a bare noun. CORE is also allowed in the possessive phrase in (18)e. (18)f further shows that AT cannot be an singular indefinite noun.⁶⁷

(18) Licit and illicit examples of AT in Mandarin

a. Quantifier NP *yixie*

*[Yixie shuiguo]_{CORE} Zhangsan zhi chi [pingguo]_{REM.}
 some fruit, Zhangsan only eat apples

Intended ⇒ ‘As for some fruits, Zhangsan only eats apples.’

b. Definite (singular) NP

*[Na-ke shuiguo]_{CORE} Zhangsan zhi chi [pingguo]_{REM.}
 that-CL fruit, Zhangsan only eat apples

Intended ⇒ ‘As for that fruit, Zhangsan only eats apples.’

c. Definite (plural) NP

[Na-dui shuiguo]_{CORE,} Zhangsan zhi xiang chi [pingguo]_{REM.}
 that-CL fruits Zhangsan only want eat apples

‘As for that pile of fruits, Zhangsan only wants to eat apples.’

d. Bare NP

[Shuiguo]_{CORE,} Zhangsan zhi xiang chi [pingguo]_{REM.}
 fruit Zhangsan only want eat apple

‘As for fruits, Zhangsan only wants to eat apples.’

e. Possessive

[Chomsky de shu]_{CORE,} Zhangsan zui xiang nian
 Chomsky de book Zhangsan most want read

Zuijianfangan.

Minimalist Program

‘As for Chomsky’s books, Zhangsan wants to read the Minimalist Program very

⁶⁷ It is also noted that CORE can be modified by the relative clause. Still, CORE denotes a set of fruit alternatives put on the desk, and REM *pingguo* ‘apples’ is included in the set. It follows that the set-denotation of CORE matters rather than definiteness.

(i.) [NP[[RC fang zai zhuo-shang] de] shuiguo]_{CORE,} Zhangsan xiang
 put at table-on DE fruit Zhangsan want
 chi [pingguo]_{REM.}
 eat apple

‘As for the fruits put on the table, Zhangsan wants to eat apples.’

much.’

f. Indefinite NP

*[Liang-ke shuiguo]_{CORE} Zhangsan zhi chi [pingguo]_{REM.}
two-CL fruit, Zhangsan only eat apples

Intended ⇒ ‘As for two fruits, Zhangsan only eats apples.’

The above data draw two generalizations: (i.) CORE can be either definite or generic, and (ii.) CORE has to denote a plural reading when definite. Nevertheless, definiteness cannot be an intrinsic property of CORE. It has been the established fact that a bare fronted NP in the topic position in Mandarin is usually interpreted as definite (Huang, Li and Li 2009:200; Tsai 2015a, b), as evidenced by (19)a-b. Apparently, definiteness pertains to the D-linking property of the topic position. It follows that CORE in (18)d can be interpreted as definite in the context that the speaker sees apples on the table while uttering (18)d.⁶⁸

(19) The bare NP is interpreted as definite in the topic position

- a. Shu, Zhangsan hui kan.
book Zhangsan will read
‘The book(s), Zhangsan will read.’
- b. Zhangsan shu hui kan.
Zhangsan book will read
‘Zhangsan, the book(s), will read.’
- c. Zhangsan hui kan shu.
Zhangsan will read book
‘I will read books.’

Nevertheless, this line of reasoning fails to explain why CORE (18)a, (18)b, and (18)f are ruled out, as they are predicted to be allowed in the topic position. What’s more, it remains not clear why plural nouns and bare nouns are able to serve as CORE. I argue that this pertains to an intrinsic property-denoting property of CORE, and CORE is a nominal

⁶⁸ Hsiao-hung Iris Wu (p.c.) points out that this view does not always hold, as evident in (i.), where the NP *shu* ‘books’ in the canonical topic position still receives a generic reading.

(i.) Shu_i, Zhangsan xihuan t_i.
book Zhangsan like
‘Books, Zhangsan likes.’

predicate.⁶⁹

On a semantic view, predicates are divided into two types, sortnal nominal predicates and adjectival predicates. The former can be defined as extensional properties, whereas the latter intentional properties, as shown in (20).

(20) Two types of predication

- a. Sortnal nominal predicate

[_{NP} boy] denotes the set of boys.

- b. Adjectival predicate

[_{Adj} handsome] translate as ‘have P_{HANDSOME}’

Nonetheless, [Beysade and Dobrovie-Sorin \(2005\)](#) contend that the denotation of the bare NP *boy* in (20)a is not precise enough in the sense that singular countable nouns cannot be used in bare forms in a sentence like **John is boy*, unless an singular indefinite article is used as in *John is a boy*. This amounts to a correlation between the projection of the functional category of Number (the posited realization of *a*) and set-denotation. The remaining puzzle is why the bare noun *boy* cannot be located in an argument position, whereas *a boy* is allowed, which exhibits a syntax-semantic mismatch. [Beysade and Dobrovie-Sorin](#) propose that bare sortal nouns denote properties of objects (or of kinds) when picked from the Lexicon, but the property-denotation of sortal nouns are unable to survive at syntax because they cannot be saturated from the outside. The only way to make sortal nouns survive at syntax is to make them bound by Number, and NumPs function as *qua-set* - They denote sets of entities (atomic individuals, groups, or quantities of matters).

(21) illustrate the denotations of noun phrases in diverse forms.

⁶⁹ From a rather crosslinguistic perspective, the restriction is not novel. [Van Hoof \(1997a\)](#) points out that topic in the XP-split construction exhibits the similar restriction. Two core observations are summarized here. First, when the topic is plural, no determiner is overtly realized, as evident in (ii). Second, there is a strict indefiniteness constraint imposed on the topic: the topic must be a simple indefinite NP and is interpreted as a generic NP that refers to a particular kind, as shown in (i). It follows that the singular NP cannot be qualified as the topic, unless it denotes a generic reading.

- | | | | | | | | | | | | |
|-------|-----|----------|------------|--------|------|-----|-----|-----|------|-------------|---------|
| (i.) | Een | (nieuwe) | bromfiets | (die) | heft | hij | een | wel | erg | luidruchtig | gekocht |
| | a | (new) | motorcycle | (that) | has | he | a | PRT | very | loud | bought |
| (ii.) | *De | (nieuwe) | bromfiets | (die) | heft | hij | een | wel | erg | luidruchtig | gekocht |
| | the | (new) | motorcycle | that | has | he | a | PRT | very | loud | bought |

([Van Hoof 1997a](#), p. 282, ex. 24a-c)

(21) The denotation of sortnal nominal predicates

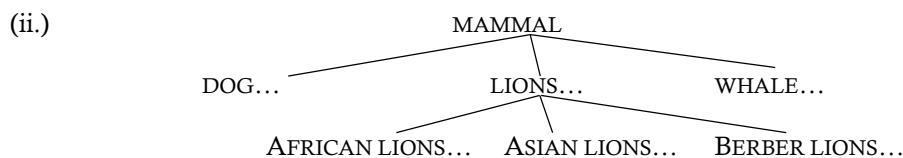
- a. [NP **boy**] denotes the property (viewed as a function and not as an entity) of being a boy, i.e., $\lambda x \text{ boy}(x)$
- b. [NumP [**a**][NP **boy**]] denotes the set of boys, i.e., $\{x, \text{boy}(x)\}$
- c. [NumP [Plural \emptyset] [NP **boys_{PL}**]] denotes the set of groups of boys, i.e. $\{X: \text{boys}(X)\}$ (capital letters notate group variables)

(Beyssade and Dobrovie-Sorin 2005, p.3, ex. 6)

In light of (21)c, the puzzle why CORE has to be either bare in (18)d or plural in (18)c, and (18)e is explained in the way that CORE has to be able to denote a set of entities of a property, this denotation entailing that CORE is plural. Take (22) for example. CORE *per se* denotes a set of entities of the property of being *films*, and REM is one of the entities included in the set. In sharp contrast, in (23), if CORE fails to have a proper denotation that includes REM, the resulting sentence is ruled out.⁷⁰

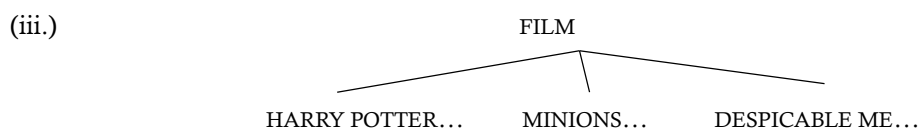
⁷⁰ I am grateful to Wei-wen Roger Liao (pc.) for pointing out to me that the nature of CORE might be related to the taxonomic interpretation. Dayal (2004:424) argues that a taxonomic domain has to be recognized as related in the interpretation of English noun phrases. For instance, two sentences in (i.) are interpreted as having taxonomic readings: the domain of quantification has to be sub-kinds of the species *lion*, as visualized in (ii.), since the predicate is kind-level. Dayal adds that common nouns would denote properties of ordinary individuals or properties of sub-kinds, while standard determiners would be combined with the latter to yield taxonomic readings.

- (i.) a. Every/a/one (kind of) lion is extinct.
 b. Two/three/most (kinds of) lions are extinct. (Dayal 2004, p.423, ex. 47a-b)



(Dayal 2004, p.424, ex. 50)

Granted this taxonomic account, the taxonomic interpretation of CORE *dianying* ‘film’ in (22) arises from its sub-kinds of *film*, within which REM *Halipote* ‘Harry Potter’ is included, as visualized in (iii.). In this light, CORE has an inherent taxonomic nature.



(22) [Dianying]_{CORE}, Zhangsan zhi kan [Halipote]_{REM}.
 Film Zhangsan only watch Harry Potter
 ‘As for films, Zhangsan only watches Harry Potter.’

(23) *[Fangzi]_{CORE}, Zhangsan zhi kan [Halipote]_{REM}.
 house Zhangsan only watch Harry Potter
Intended ⇒ ‘As for houses, Zhangsan only watches Harry Potter.’

From a semantic perspective, [Pan and Hu \(2008\)](#) also point out that the topic (in the sense of CORE in (22)) must be able to denote a set of members such that REM in our sense is included in the set, giving rise to a set-member relation.

All in all, I argue that CORE is a nominal predicate and has to be a property-denoting expression. This property is not unique to Mandarin, however. German ST also displays the identical property, as shown in (24). [Ott \(2011\)](#) points out that in German ST, CORE has to be a property-denoting expression and an article is always pleonastic to the extent that it is can be cliticized *’n* or is even reduced up to omissionn.

(24) German ST
 [{Ein/’n/ Ø }Auto]_{CORE} kann ich ich mir höchstens[ein gebrauchtes]_{REM} leisten.
 a car can I me at best a used afford
 ‘As for cars, I can afford a used one at best.’

(Slightly modified from [Ott 2011](#), p. 21, ex. a)

The nominal predicate status of CORE is able to explicate the mixed nature of AT. As discussed previously, AT is able to denote a contextually available set of alternatives, and the F-constituent in the host clause is included in the set. The property-denoting property of AT is due to the nominal predicate status of CORE, while ‘contextuality’ pertains to the topicality of CORE when it is situated in a topic position.

The second characterizing property of CORE is that the presence of a contextually available set associated with CORE has nothing to do with the nature of CORE. Precisely, though in a canonical topic position, CORE itself is not a topic by nature, and it is arguably a proper-denoting expression. Though AT is arguably analyzed as CORE, this does not mean that CORE has to be AT under all circumstances. Precisely, whether AT serves as an

AT or a contrastive topic (CT) depends on its integration into discourse. As shown in (25)a, the truth value of the yes/no question remains to be confirmed, but the speaker is able to repeat the NP *shuiguo* ‘fruit’ and merge it to a topic position, signaling the integration of a current response into the discourse, and F-mark the NP *pingguo* ‘apples’ as new information in the response. In marked contrast, (25)b shows that CORE *shucaicai* ‘vegetables’ can be a contrastive topic, marked by the contrastive topic marker *ne* (Constant 2014), and form a contrast with the other topic in the preceding clause. It follows that CORE can be an AT and a CT. As will become apparent later, the information-structural interpretation of CORE is acquired late in the course of derivation, or, under the cartographic approach, are associated with Spec positions of corresponding functional projections that serve as landing sites for CORE.

(25) Comparison between NP AT (Type I) and NP CT (Type I)

a. NP AT (Type I)

Question: Ni xiang chi shuiguo ma?
 you want go fruit SFP
 ‘Do you want to eat fruits?’

Response: [Shuiguo_{CORE}]^{AT} ah, wo zhi xiang chi [pingguo]^{FOC}.
 fruits TOP I only want eat apples
 ‘As for fruits, I only want to eat apples.’

b. NP CT

[Shuiguo_{CORE}], wo zui ai chi [pingguo]^{FOC}; [shucaicai_{CORE}]^{CT} ne, wo
 fruit I most like eat apples vegetables CT I
 zui ai chi [qiezi]^{FOC}.
 most like eat eggplants

‘As for fruits, I like to eat apples most; by contrast, as for vegetables, I like to eat eggplants.’

To summarize, the two properties of CORE suggest two facets of AT. First, the myth that AT is semantically connected to a NP in the host clause is explained by the fact that CORE has to be a property-denoting expression- It denotes a set of entities of the property- and REM in the host has to be included in the set. This facet shares a similar view from Jin’s (2015) Generative Lexical approach to AT that AT is a sortal type and is not an actual

nominal argument that can be realized in the argument position. Second, the information-structural notion of CORE interpreted as AT or CT is sensitive to its discursal context. This can be taken to show that the information-structural notion is not an inherent property of CORE, and instead, it encodes the information-structural notion of AT or CT according to its landing site of corresponding functional projections, presumably TopP or Contrastive TopP.⁷¹

By contrast, REM is not constrained in the way that it can be a quantified NP, a definite/referential singular, a bare NP, an indefinite singular NP, or an indefinite plural NP, as illustrated in (26)a-d respectively.

(26) REM in various NP forms

a. Quantified NP *yixie* ‘some’

| | | | | | |
|------------------------|----------|-------|-----|--------|----------------------------|
| [Hua] _{CORE,} | Zhangsan | xiang | mai | [yixie | meiguihua] _{REM.} |
| flower | Zhangsan | want | buy | some | rose |

‘As for flowers, Zhangsan wants to buy some roses.’

b. Definite/referential singular NP

| | | | | | |
|------------------------|----------|-------|-----|----------|----------------------------|
| [Hua] _{CORE,} | Zhangsan | xiang | mai | [zhe duo | meiguihua] _{REM.} |
| flower | Zhangsan | want | buy | this CL | rose |

‘As for flowers, Zhangsan wants to buy this rose.’

c. Bare NP

| | | | | |
|------------------------|----------|-------|-----|-----------------------------|
| [Hua] _{CORE,} | Zhangsan | xiang | mai | [meiguihua] _{REM.} |
| flower | Zhangsan | want | buy | rose |

‘As for flowers, Zhangsan wants to buy roses.’

d. Indefinite plural NP

| | | | | |
|------------------------|----------|-------|-----|------------------------------------|
| [Hua] _{CORE,} | Zhangsan | xiang | mai | [wu-duo meiguihua] _{REM.} |
| flowers | Zhangsan | want | buy | five-CL roses |

‘As for flowers, Zhangsan wants to buy five roses, (and give them to his sister).’

e. Indefinite singular NP

| | | | | |
|------------------------|----------|-------|-----|------------------------------------|
| [Hua] _{CORE,} | Zhangsan | xiang | mai | [yi-duo meiguihua] _{REM.} |
| flower | Zhangsan | want | buy | one-CL rose |

⁷¹ As will become apparent in Section 5.3 of this chapter, the minimal assumption taken here is that a lexical item is assigned a [Topic]-feature in the numeration, and whether it is interpreted as a canonical topic or a contrastive topic depends upon its landing site (or its corresponding feature checker). It has been observed that in Mandarin, TopP in the CP layer and the IP layer are different in nature.

‘As for flowers, Zhangsán wants to buy one rose, (and give it to his sister).’

A word of clarification is that REM is not an F-constituent inherently, and rather, it obtains a focal interpretation in the course of derivation, similar to the two faces of CORE.

In light of the CORE-REM asymmetry, we can state the following descriptive generalization:

(27) CORE-REM Asymmetry

In AT, CORE is a property-denoting expression, denoting a set of alternatives of a property’, REM can be in various NP forms, and a set of entities it denotes has to be included in the set of CORE.⁷²

In a nutshell, the central generalization from this section is that CORE and REM have two facets respectively. The first facet points out that CORE and REM are intricately different; the former is more constrained and has to be a nominal predicate, denoting a set of entities of a property, and a set of entities denoted by the latter has to be included in the set. Analyzed on a par with [Ott’s \(2011\)](#) symmetry-breaking analysis of German ST, which will be reviewed in Section 4, we might entertain a possibility that CORE and REM are merged as a predicative structure at the outset of derivation, and subsequently CORE is sub-extracted, as visualized in (28). Though the predicative structure in (28)a readily captures our guiding intuition, (28)b, if on the right track, can be motivated to account for only NP AT (Type I) rather than VP AT (Type II). In Section 5, I will reject the hypothesis in (28).

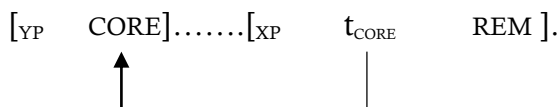
(28) The hypothetical analysis of CORE and REM

a. Predicative structure



predicative structure

b. Sub-extraction of CORE



⁷² Surely, interpreted another way, the relation can be considered a taxonomic relation in line with [Dayal’s \(2004\)](#) analysis.

Moreover, the second facet suggests that the information-structural notion of CORE and REM, interpreted as an AT and an F-constituent respectively, is independent of their semantics. This is tantamount to saying that the information-structural import pertains to a result of the feature-checking process in corresponding functional projections in the CP periphery and the ν P periphery.

4. Previous studies

In the following sub-sections, I evaluate three potential analyses that seem to be plausible to account for the properties of NP AT (Type I) or VP (Type II). Nevertheless, the conclusive view is that none of them can be motivated to explicate NP AT (Type I) and VP (Type II).

4.1 Landau (2006): Chain resolution in V(P)-fronting- P-recoverability and economy of pronunciation

To explain the verb doubling phenomena in Hebrew, Landau (2006) argues for a PF-algorithm that applies to syntactic chains formed between the target copied object and the original object to obtain their phonetic expressions. Hebrew allows for phrasal infinitive fronting (*PI-fronting*) and bare-infinitive fronting (*BI-fronting*), as exemplified in (29)a-b respectively. In (29)a, the whole ν P undergoes fronting to the sentence-initial position, whereas, in (29)b, only the verb is copied to the sentence-initial position.

(29) a. PI-fronting in Hebrew

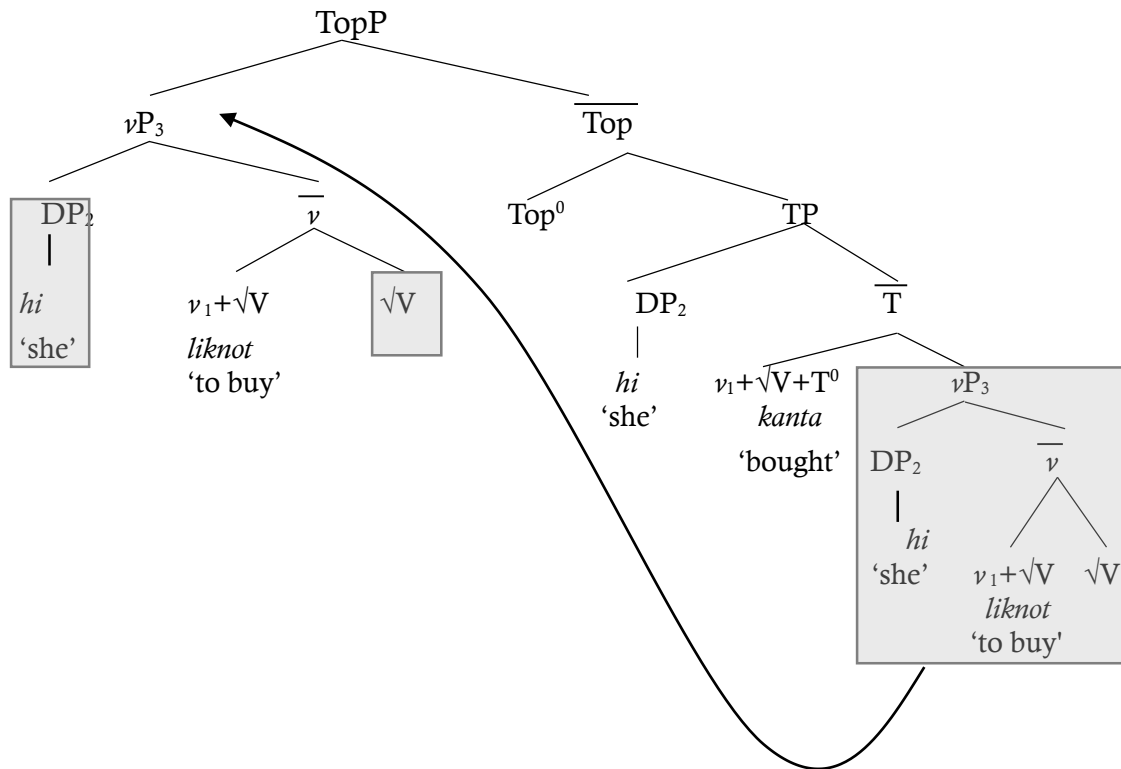
[ν P liknot et ha-praxim], hi kanta.
to-buy ACC the-flowers she bought
‘As for buying the flowers, she bought.’

b. BI-fronting in Hebrew

[ν liknot], hi kanta et ha-praxim.
to-buy she bought ACC the-flowers
‘As for buying, she bought the flowers.’ (Landau 2006, p.37, ex. 8a-8b)

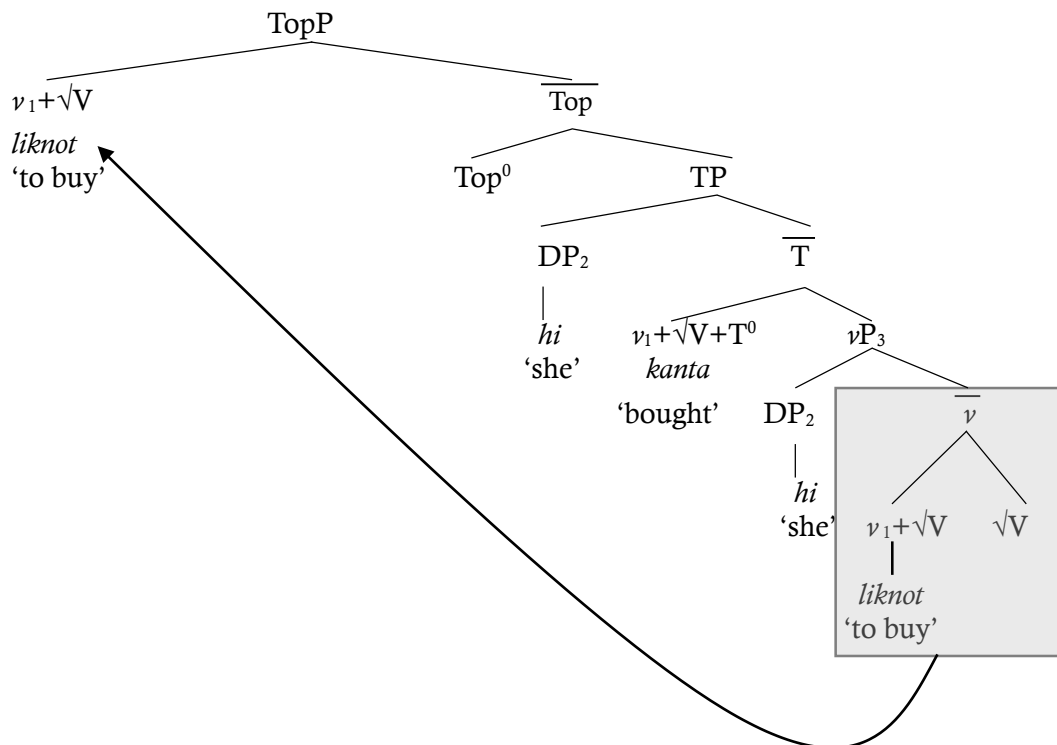
Landau proposes that *PI-fronting* is derived by making a copy of νP in which a verb root (\sqrt{V}) obtains its *binyan* template from ν^0 , forming a complex [$\sqrt{V}+\nu$], and merging it to [Spec, TopP], as instantiated in (30) (the irrelevant derivational details are left aside). The deletion at PF applies to the shaded parts.

(30) The derivation of PI-fronting (= (29)a)



By contrast, *BI-fronting* only involves copying of the featural complex [$\sqrt{V}+\nu$] and merges it to [Spec, TopP], as schematized in (31).

(31) The derivation of BI-fronting (= (29)b)



Then, two upcoming questions are (i.) how PF deletion of copies is sanctioned and (ii.) what forces pronunciation of the higher copies.⁷³ The questions deserve explanations because PF has no way of knowing which copy has to be interpreted, and because no information from LF is accessible to determine which copy should be pronounced. Landau adds that there is a conflict between *P-Recoverability* and *Economy of Pronunciation*, as stated in (32) and (33) respectively, and argues that *P-recoverability* always overrides economy in deriving verb doubling in Hebrew.

(32) P-Recoverability

In a chain $\langle X_1 \dots X_i \dots X_n \rangle$, where X_i is associated with phonetic content, X_i must be pronounced. (Landau 2006, p. 56, ex. 49)

⁷³ At first glance, this long V-movement violates strict locality or the Head Movement Constraint (Travis 1984). Nevertheless, it should be noted that the minimal assumptions Landau adopts here are that the distinction between X^0 and XP, under bare phrase structure, is reduced to contextual relations; in other words, a non-projecting head is an X^0 and a XP at the same time. In addition, the head nature of V-movement may be an artifact of constraints imposed on affixation. Thus, if there is nothing that rules out the possibility of head-movement, it is made possible.

(33) Economy of Pronunciation

Delete all chain copies at PF up to *P*-recoverability.

(Landau 2006, p. 57, ex. 51)

The overriding effect of *P*-recoverability is made visible. Consider *PI-fronting* in (30). PF-deletion applies to the shaded constituents. Of three V-copies, only two copies receive phonetic pronunciation: the V-copy adjoined to TP, and the V-copy adjoined to TopP. Landau contends that the pronunciation of these two V-copies complies with *P-recoverability*. Namely, the T⁰-adjoined copy is associated with the phonological requirement of T⁰-The spell-out of tense and agreement-, whereas the fronted V-copy is associated with a phonological requirement imposed by Top⁰- the characteristic intonation of fronted VPs.⁷⁴ Thus, the economy in (33) demands that deletion operates on the lower V-copy. This line of reasoning applies to *BI-fronting* in (31). The analysis advocated here upholds the claim that PF alone is able to determine the pronunciation of certain copies without resorting to LF for the interpretation of copies, and accords well with the Modular Chain Resolution (MCR).

(34) Modular Chain Resolution

The decision which chain copy to be pronounced/interpreted is locally determined at PF/LF, respectively. (Landau 2006, p. 34, ex.4)

The analysis of chain resolution, however, is not applicable to VP AT (Type II) in Mandarin in several regards. First, it has been the established fact that Mandarin is devoid of ν^0 -to-T⁰ movement; to be more precise, the verb only moves to a low functional projection in the extended VP area (such as ν P, AspP, etc.) (See Cheng & Vicente 2013). As evidenced by the designated position of the subject-oriented adverb *yiguan* ‘always’ in (35), which is assumed to be merged in the ν P domain (Yang 2013), the verb *mai* ‘buy’ is disallowed to move out of ν P to a higher position. Along this line of reasoning, T⁰ in Mandarin lacks phonetic content. Even if one assumes ν^0 -to-T⁰ movement in Mandarin,

⁷⁴ A similar view can be found in Landau (2007), where the Extended Projection Principle (EPP) is arguably a PF selectional requirement of functional heads, and applies to the head of the selected phrase (T, Top, C, etc.). This brings to light the puzzle why null heads cannot appear in EPP positions. An immediate consequence is that the EPP cannot be treated as instantiating the agreement/checking in narrow syntax. What is relevant to the present discussion is that the position to which the copy merges must be pronounced at PF because it has to satisfy the EPP requirement by spelling out the overt head of a selected phrase.

all the copies must be deleted because v^0 and T^0 do not bear phonetic content in Mandarin, except the highest one spelling out the topic feature (phonetically realized as *ah*), according to P-recoverability (32), yielding the ungrammatical resulting sentence in (36).

(35) *Mai shuiguo (ah),_{[TP} Zhangsan mai_i [_{VP} yiguan^{SUBJECT-ORIENTED} t_i
 buy fruit TOP Zhangsan buy always
 [_{VP} t_i pingguo]].
 apple

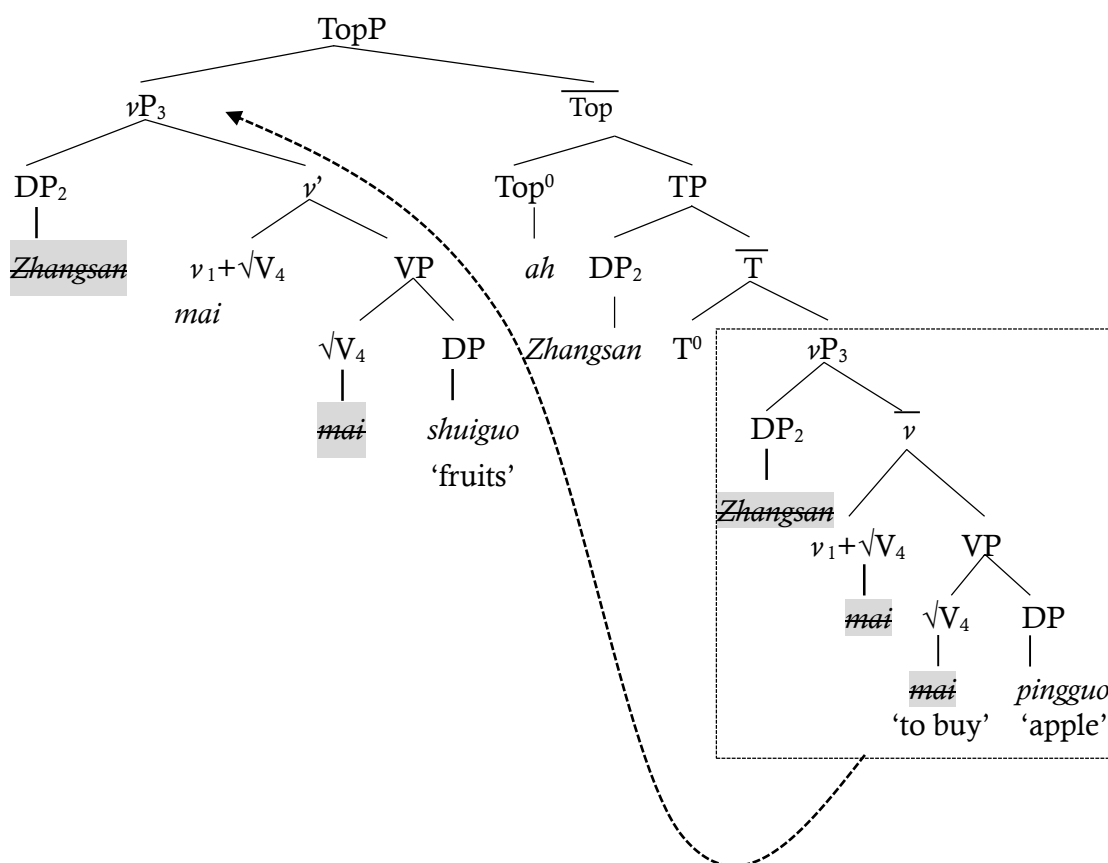
Intended ⇒ ‘As for buying fruits, Zhangsan always buys apples.’

(36) *Mai shuiguo (ah), Zhangsan yiguan pingguo.
 buy fruit TOP Zhangsan always apple

Intended ⇒ ‘As for buying fruits, Zhangsan always buys apples.’

In the same vein, following Landau’s analysis, the lower copy in the host clause in Mandarin must be deleted because it occupies a position that does not impose any phonological requirement, compared with the verb copy in T^0 in Hebrew which spells out tense and agreement morphology. Consider (37). Under his analysis, the low verb copy *mai* ‘buy’ need not spell out the phonetic content of v^0 , which is devoid of any phonetic realization, whereas the high verb copy is able to spell out Top^0 (the topic marker *ah* in Mandarin). Consequently, the low copy should be deleted according to *Economy of Pronunciation*. (37) is the syntactic derivation of (36), following Landau’s analysis. Apparently, this analysis yields an ungrammatical AT VP (Type II) sentence (36), however.

(37) Hypothetical derivation of AT VP (Type II)



Third, as discussed previously, AT VP (Type II) in Mandarin obligatorily enforces lexical identity effects; that is, the high verb copy and the low one must be identical on the surface. A natural translation of the effects suggests that two copies are not being deleted at PF, which poses a direct challenge to *P-recoverability*. Fourth, it is observed that individual-level predicates cannot be a VP AT (Type II), while stage-level predicates are allowed to serve as a VP AT (Type II), as shown in (38) and (39) respectively. Interestingly, once the individual-level predicate *xihuan* ‘like’ in the VP AT is deleted, as in (40), the resulting sentence becomes grammatical. It follows that Landau’s analysis does not capture the predicate type restriction.⁷⁵

⁷⁵ I will return to the discussion on the predicate type restriction in Section 4. Heavily simplified for the time being, the line of reasoning pursued here is that individual-level predicates lack an event argument that can be focused. This explains the myth in (40) that deletion of the individual-level predicate in the VP AT (Type II) affects the F-domain in the host clause, which does not include the verb itself because the verb is unable to import an event argument. This view is consistent with Cheng and Vicente’s (2013) treatment for the phenomenon that verb doubling is associated with a verum focus interpretation.

(38) VP AT (Type II) with the individual-level predicate *xihuan* ‘like’

*[_{VP} Xihuan [hua]_{CORE}]^{AT}, Zhangsan zhi [xihuan [meiguihua]_{REM}]^{FOC}.
 like flower Zhangsan only like rose
 ‘As for flowers, Zhangsan only likes roses.’

(39) VP AT (Type II) with the stage-level predicate *mai* ‘buy’

[_{VP} Mai [hua]_{CORE}]^{AT}, Zhangsan zhi [mai [meiguihua]_{REM}]^{FOC}.
 buy flower Zhangsan only like rose
 ‘As for flowers, Zhangsan only buys roses.’

(40) NP AT (Type I)

[_{NP} [hua]_{CORE}]^{AT}, Zhangsan xihuan [[meiguihua]_{REM}]^{FOC}.
 flower Zhangsan like roses
 ‘As for flowers, Zhangsan likes roses.’

Landau’s analysis of VP-fronting offers insight into the PF resolution of chains, and counters all PF-LF dependencies in chain resolutions. Nevertheless, there are empirical kinks for this analysis to be worked out for VP AT (Type II) in Mandarin.

4.2 Ott (2014): A biclausal analysis of contrastive Topic

(41) represents two instances of the contrastive left dislocation (CLD) in German, where the left-dislocated material displays connectedness to the clause. Specifically, the dislocated (dXP) material is co-referential with its correlate in the main clause on the surface.

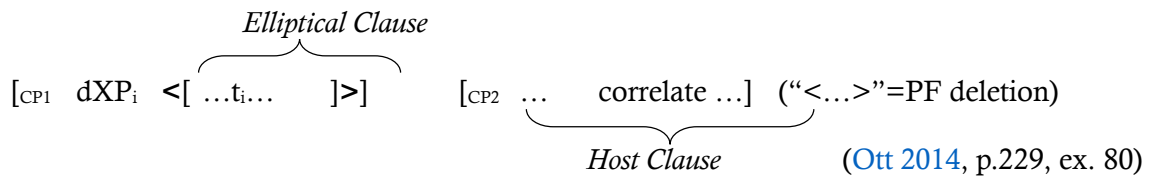
(41) Contrastive left dislocation in German

- a. [Den Peter]_{dXP}, [den]_{CORRELATE} habe ich gestern gesehen.
 the Peter.ACC him.ACC have I yesterday seem
 ‘I saw Peter yesterday.’
- b. [Dem Peter]_{dXP}, [dem]_{CORRELATE} habe ich gestern geholfen.
 the.DAT Peter him.DAT have I yesterday helped
 ‘I helped Peter yesterday.’

(Ott 2014, p.278, ex. 21a)

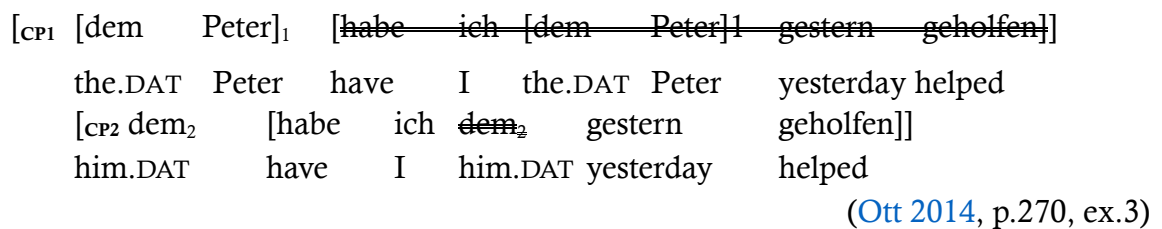
Ott (2014) argues that such CLD involves a juxtaposition of two parallel CPs, with the first CP being deleted at PF after the dXP moves to the left edge of CP₁. (42) schematizes the derivation of the CLD.

(42) The proposed derivation of the CLD in German



Ott adds that the left-dislocated dXP is a remnant of clausal ellipsis. (43) exemplifies how (41)b is derived under his proposed analysis (42). It is shown that two parallel CPs are merged, (forming a bi-clausal structure), and CP₁ is reduced by deletion of the sister of the fronted XP after *den Peter* moves to the left edge of CP₁.

(43) The proposed derivation of (41)b



Ott offers two pieces of empirical evidence for motivating this ellipsis approach. First, systematic covariance of the correlate and dXP in case, accusative case in (41)a and dative case in (41)b, suggests that the correlate and dXP are case-marked by the same predicate in the host and the elliptical clause respectively. This is referred to as form identity effects. Ott claims that the form identity effects can be readily captured by assuming that the dXP and the correlate are case-marked by the same predicate in two different clauses. Thus, it follows that the dXP and the correlate bear the same θ -role.⁷⁶ In addition, adopting Merchant's (2001) implementation of ellipsis licensing in terms of a Focus Condition in (44), Ott suggests that deletion be guided by the focus condition.

⁷⁶ The interested reader is referred to Ott's (2014) paper discussing how this ellipsis approach resolves the stipulation of a devised chain formation proposed in Frey (2005:223), since the elaboration of the chain formation is not directly relevant to the discussion.

(44) Focus Condition on Clausal Ellipsis

The propositional sister α of a clause-initial XP can be deleted only if α is e-GIVEN.⁷⁷

Nevertheless, I argue that Ott's bi-clausal analysis of the CLD fails to apply to NP AT (Type I) and VP AT (Type II) in Mandarin. First, Ott's analysis fails to explain the semantic relation between CORE and REM in (45) and (46). (47) exemplifies the implementation of Ott's analysis of deriving NP AT (Type I), allowing for two possibilities. Apparently, though (47)a is the correct resulting sentence, the puzzle why CORE rather than REM moves to the left edge of CP₁ and the obligatory deletion of CORE in CP₂ must be activated is not accounted for. Simply put, it is not clear why PF deletion is able to target a non-constituent element and delete part of it. The same puzzle applies equally to the movement of CORE.

(45) NP AT (Type I)

[[Yuyanxue]_{CORE}]^{AT}, Zhangsan zhi nian [[jufaxue]_{REM}]^{FOC}.
linguistics Zhangsan only study syntax
'As for linguistics, Zhangsan studies syntax only.'

(46) VP AT (Type II)

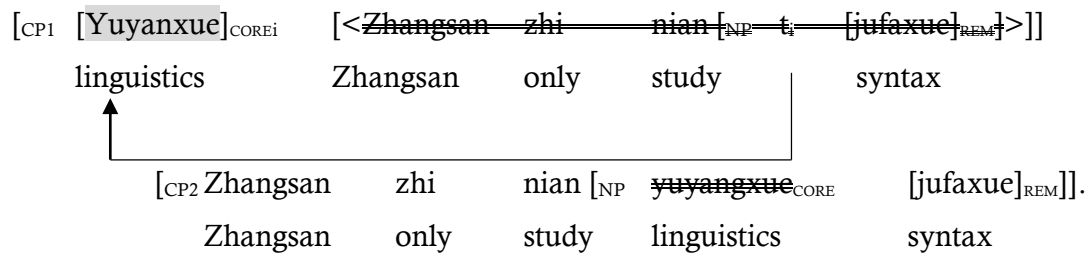
[_{VP} nian [yuyanxue]_{CORE}]^{AT}, Zhangsan zhi [nian [jufaxue]_{REM}]^{FOC}.
study linguistics Zhangsan only study syntax
'As for studying linguistics, Zhangsan studies syntax only.'

⁷⁷ A notion of givenness is defined as follows:

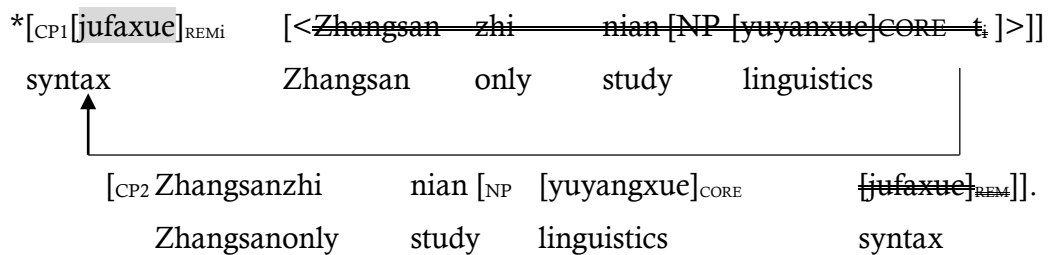
- (i) e-GIVENESS (Merchant, to appear)
An expression X counts as e-given if and only if X has a salient antecedent A and modulo \exists -type shifting,
a. A entails \exists -clo(X), and
b. X entails \exists -clo(A). (qtd in Ott 2014, p.280, ex. 28)

(47) The hypothetical derivation of (45) along the line of Ott's analysis

a. Possibility One



b. Possibility Two



Second, Ott points out that the non-elliptical version of the reduced structure in (48) is generally accepted, though displaying a higher degree of redundancy. Ott treats this as a piece of evidence supporting the analysis that the CLD is derived from a juxtaposition of two clauses, with the first clause being reduced by clausal ellipsis at PF. It is apparent that NP AT (Type I) in Mandarin does not even allow this redundancy, as evident in (49). This is tantamount to proving that NP AT (Type I) should not be analyzed as being derived from a juxtaposition of two clauses. Third, granted the bi-clausal analysis, the obligatory bare form of VP as a VP AT (Type II) is not explained.

(48) The non-elliptical version of the CLD in German

#Den Peter habe ich gestern gesehen. den habe ich
 the Peter have I yesterday seen him have I
 gestern gesehen.
 seen yesterday
 'I saw Peter yesterday. I saw him yesterday.' (Ott 2014, p.278, ex.23)

(49) *Wo chi shuiguo pingguo, wo chi shuiguo pingguo.

I eat fruit apple I eat fruit apple

Intended ⇒ 'I eat fruits apples, I eat fruits apples.'

There is one conceptual problem with Ott’s analysis; it is not properly addressed how two clauses, CP₁ and CP₂, are merged. Though Ott specifically states that the CLD relies exclusively on the independent attested operations of \bar{A} -movement and clausal ellipsis, and ‘a grammar equipped with these operations is thus automatically predicted to generate CLD, given that clauses can be freely juxtaposed in discourse’ (p.300), a controversial issue is in what way discourse licenses this juxtaposition, which is not explicitly addressed.

In short, it is possible to grant a bi-clausal analysis of the CLD to NP AT (Type I) in Mandarin, but the problems stated above show that the PF deletion does not only target CP₁, but also some internal material in CP₂. More precisely, if CORE and REM are merged as a constituent XP and appear in two independent CPs, this implies that there should be a special deletion rule that targets REM in CP₁ but CORE in CP₂. However, it remains a piece of the jigsaw what this deletion mechanism is, or even what guides the deletion.

4.3 Ott (2011, 2015): A symmetry-breaking approach to split topicalization

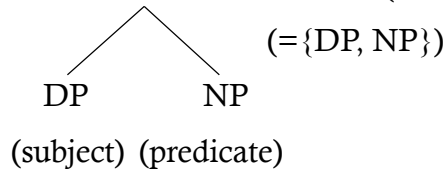
Ott (2011, 2015) develops a novel theory of ST in German by arguing that gapless ST instantiates symmetry-breaking movement. Consider a German ST sentence in (50).

(50) ST in German

| | | | | |
|-----------------------------|------|-----------|------------|----------------------------------|
| [_{TOP} Nagetiere] | mag | Christine | vor allem | [_{REM} Eichhörnchenund |
| rodents | like | Christine | especially | squirrels and |
| Capybaras] | | | | |
| Capybaras | | | | (Ott 2011, p.77, ex .27) |

Ott’s analysis maintains that CORE (NP), a property-denoting expression, and REM (DP) are two autonomous objects and are merged to form a set {NP, DP}, which is interpreted as a bare predication structure (BPS), as visualized in (51). Ott adds that the relation between TOP and REM in (50) can be described as a predicate-argument relation in underlying form, such that TOP is the NP predicate of its DP ‘subject’ REM. A BPS represents a set {DP, NP} defined by Merge, and there is no linear ordering between NP and DP implied in (51). (52) exemplifies (51).

(51) Bare Predicative Structure (BPS)



(52) *_{[DP} Eichhörnchen und Capybaras] _{[NP} Nagetiere].
 squirrels and capybaras rodents

(51), however, is a syntactically symmetrical structure and locally unstable, because the configuration {DP, NP} has no detectable head (label) according to *Minimal Search*⁷⁸, and it is not able to enter into further computation. Ott proposes that ST is required to resolve this local instability by moving CORE to another position, adopting the Chomsky-Moro perspective, as visualized in (53). (53)a shows that the derivation starts with a symmetrical structure, and DP is forced to undergo two steps of movement- The symmetry has to be broken at the phasal level, when NP moves to [Spec, *v*P], followed by topicalization, as shown in (53)b. It should be noted that following *Minimal Search*, XP receives a label (DP) from its stranded object, that is, *Eichhörnchen und Capybaras*, after NP moves at the phase level. Given the symmetry-breaking analysis, it follows that TOP (=NP) cannot remain in-situ, yielding the symmetrical BPS in place, as evident in (54).

⁷⁸ The notion of Minimal Search adapted by Ott's (2015) analysis can be informally stated as below.

(i.) **Labeling by Minimal Search**

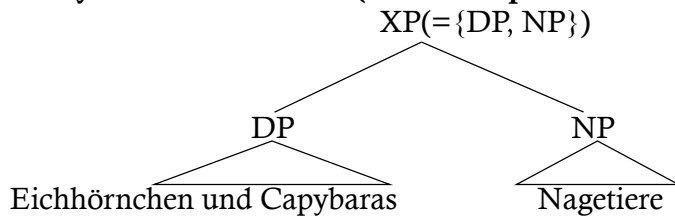
For any syntactic object $K = \{\alpha, \beta\}$, α is the label if α is an LI and β is an XP.

Given this notion, in the case of ST, when DP merges with NP, no labeling is given to the meager structure in (ii.a.), which represents an instance of local instability. To resolve this local instability and endow the structure in (ii.a.) with a label, NP has to move out in order for the syntactic computation not to crash. The previous meager structure is labeled as DP, as shown in (ii.b).

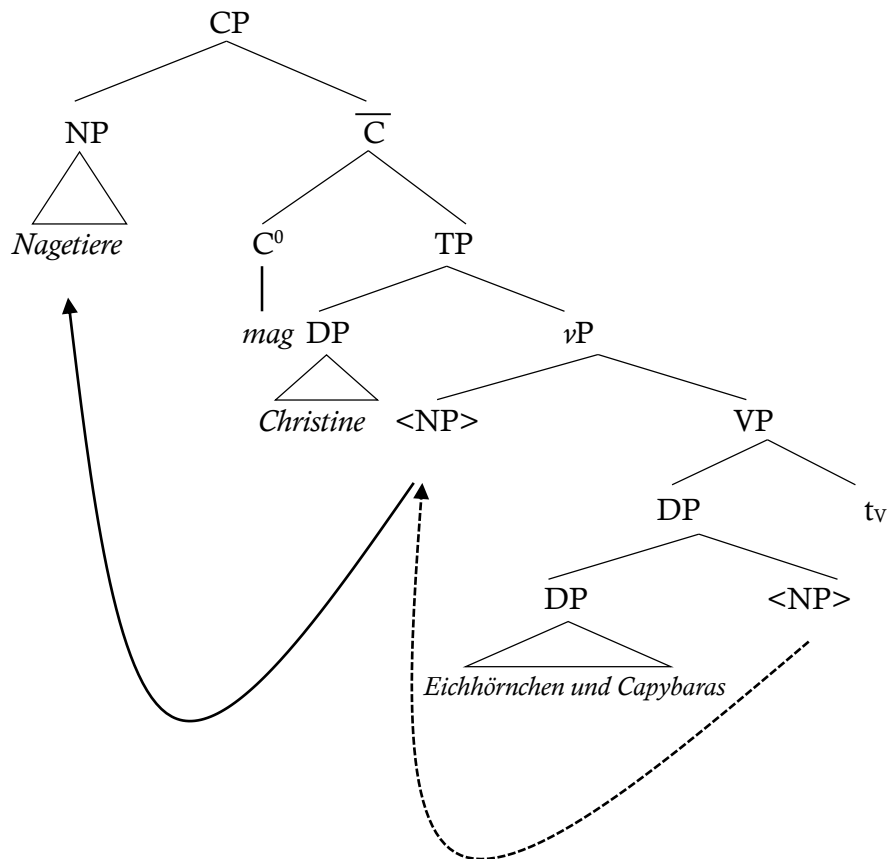


(53) The proposed derivation of (50)

a. **Symmetrical structure(= the bare predicative structure (BPS))**



b. **Symmetry-breaking movement**



(54) The hypothetical gapless ST without the asymmetry-breaking movement

*Christinemagvor allem (Nagetiere) Eichhörnchenund Capybaras (Nagetiere)
 Christine like especially rodents squirrels and Capybaras rodents
 (Ott 2011, p.79, ex .29)

Under Ott's analysis, the symmetry-breaking movement is triggered by both labeling and a frame-setting requirement in (55), which states that the fronted predicate (=X) acts as a frame-setting expression, and introduces a conceptual frame relative to which the following proposition (= Y) is interpreted.

(55) Frame-setting

In (X, Y), X is the frame for Y iff X specifies a domain of (possible) reality to which the proposition expressed by Y is restricted.

(Jacobs 2001, p. 656; cited in Ott 2015).

Ott's symmetry-breaking analysis lies in a NP-DP distinction, also advanced in Jheng's (2013, 2014) predicate inversion analysis, and calls for a need to create a label over the course of derivation. Nevertheless, there are three conceptual problems with Ott's analysis. First, symmetry-breaking movement can be regarded as a mechanism to guarantee an *aboutness* relation between CORE and REM (or the comment containing REM). Nonetheless, the notion of *aboutness* or frame-setting is far from clearly specified at syntax, the similar problem discussed in Shi (2000). Second, if the symmetry-breaking movement is triggered in order for XP to receive a label, it is not clear to me why NP has to undergo movement rather than DP. A possible solution to this puzzle is to say that only DP can be merged with V^0 to form VP, this gives rise to an apparently look-ahead issue.

Despite there being several downsides of Ott's analysis, I suggest that there are three crucial insights inherent in his analysis. First, there is an intrinsic semantic difference between CORE (TOP in his analysis) and REM in their denotations- The former is a property-denoting expression, while the latter denotes a set of entities. This distinction receives support from the CORE-REM asymmetry discussed in Section 3. Second, the connectedness between CORE and REM receives a straightforward explanation- They form a bare predicative structure at the outset of derivation, and subsequently CORE undergoes movement. This merits the observations that (i.) CORE is island-sensitive, and (ii.) it exhibits unbounded \bar{A} -dependencies.

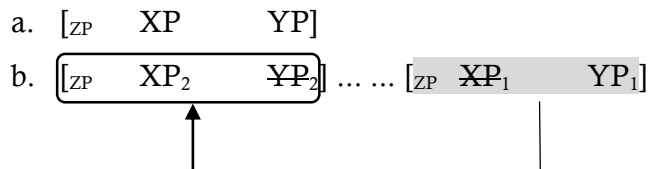
Nonetheless, Ott's analysis only copes with the case where CORE is a NP rather than a VP in our VP AT (Type II).

4.4 Summary

The crucial generalization from the three analyses points to a tug of war between movement and deletion to derive XP-split constructions. As illustrated in (56)a, assume that XP is merged with YP to form a complex structure ZP, but the resulting structure in (56)b indicates that movement has to take places by making a copy of ZP and ZP is merged

to a higher position. Movement is a result of copy and move (Chomsky 1995), and it only ensures that there are two identical copies on the surface. (56)b, however, suggests that there might be a peculiar deletion rule that is able to operate on the target object YP₂ and XP₁ in order to derive the correct surface structure. Then, what guides the deletion mechanism?

(56)



In Section 5, I will first discuss the theoretical aspects of these questions, and show how they can be overcome on empirical and theoretical grounds.

5. The proposal

In Section 5.1 and 5.2, I first spell out the assumptions for the proposed analysis of AT in Mandarin. In Section 5.3, I further show that the syntactic realization of CORE and REM pertains to the availability of two peripheral zones along the clausal spine of CP and *v*P.

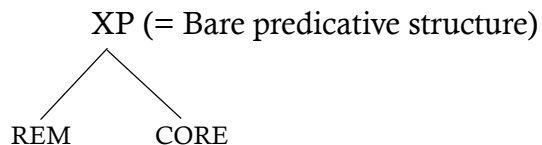
5.1 Bare predicative structure

To capture the connectedness between CORE and REM, I adopt Jheng's (2013, 2014) nominal predicate analysis of AT in assuming that CORE and REM are merged as a bare predicative structure (XP), as instantiated in (57).⁷⁹ As is argued in Section 3, CORE is a nominal predicate that is able to denote a set of alternatives (entities) of a property, whereas REM denotes an entity that is included in the set. In (57), REM is a subject that is predicated of CORE. For concreteness, suppose REM is a plural NP *pingguo* 'apples', and when predicated of CORE that denotes a property of being fruits, it carries the property of being *fruits*. The view that treats AT (CORE in our sense here) as a predicate has been

⁷⁹ It is admitted that this syntactic configuration is similar to Ott's Bare Predicative Structure (BPS) where DP and NP are merged as a complex without a label.

endorsed in several studies. In decomposing the aboutness relation, Pan and Hu (2008) propose a topic interpretation condition in (58), which states that relatedness between the topic and another constituent in the host can be thought of as a subject-predicate relation, and X (AT=CORE) denotes a property or attribute of Y.⁸⁰ Under this condition, the topic is proposed to be a proper-denoting element.

(57) Bare predicative structure



(58) Topic Interpretation Condition⁸¹

In a configuration $\Sigma = [_{\text{TOPP}} X [_{\text{IP}} \dots Y \dots]]$, the topic X is properly interpreted if it can form a subject-predicate relation with an element Y in the comment clause, where Y is the subject and X, the predicate. (Pan and Hu 2008, p.377, ex.9)

It is further assumed that XP can be taken by a verb as a proper actual argument, as the derivation proceeds. This NP-internal predication is configurationally defined in terms of a small clause configuration XP. Williams (1980) argues for two sorts of predication, *external predication* and *internal predication*. Following Williams' claim, syntactic predicates have monadic functions and can have no more than one argument position to be saturated.

⁸⁰ Pan and Hu propose two conditions. One is the licensing condition, and the other is the interpretation condition in (58). The former enforces set-intersection, stating that the in dangling topics (ATs in our sense), the set generated in the comment that constitutes the subset of the set denoted by the topic NP. Under this condition, (i.) can be interpreted as saying that a set of entities of being apples is a subset of another set of fruits.

- (i.) Shuiguo, Zhangsan xihuan chi pingguo.
 fruit Zhangsan like eat apple
 'As for fruits, Zhangsan likes to eat apples.'

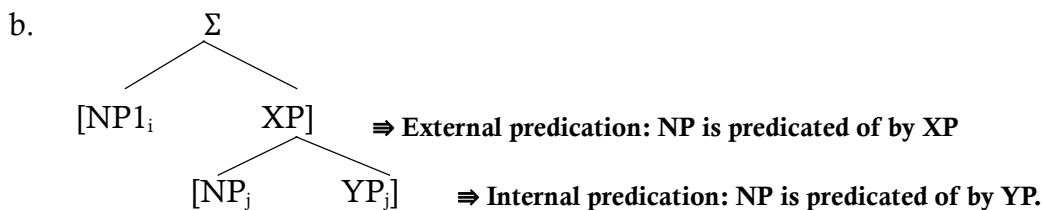
⁸¹ Shi (2000) also points out that the non-gapped AT in (i.) can be analyzed as a subject-predicate relation, but the predication is established in the inference (marked in shadow).

- (i.) [Na-chang da-huo (a)]^{AT}, xingkui xiaofangdui lai-DE-kuai, (suoyi)
 that-CL big-fire TOP luckily fire brigade come-RESULT-fast so
 jishi ba ta pumie le.
 in time BA it put out ASP
 'As for that big fire, luckily, the fire brigade came quickly, (so it was put out in time).'

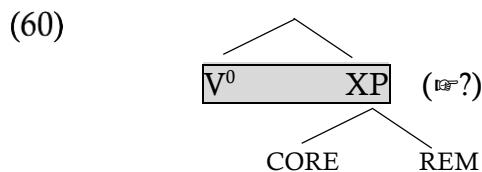
There are, nonetheless, no such restrictions on the subject, and consequently one subject can have two different predicates, as shown in (59)a. The structure in (59)b instantiates two types of predication.⁸²

(59) Two types of predication

a. John_i [made [Bill_j sick_j]]_i



The bare predicative structure in (57), though readily capturing our guiding intuition that CORE and REM are connected at syntax, says nothing about how XP can enter into syntactic computation- That is, what licenses the merge of XP with V⁰ to form VP, as shown in (60), for example.



Notice that in (62), CORE is apparently taken by the verb *kan* ‘read’, and REM is taken by the same verb in the host clause. As mentioned previously, the presence of a verb in VP AT (Type II) only affects the F-domain in the host clause. The absence of the verb in NP AT (Type I) in (61) dictates the F-domain only includes REM, while the presence of the verb in VP AT (Type II) in (62) forces the F-domain to include the VP in the host clause. This can be taken to show that CORE and REM in (62) are licensed by the same relation with the verb. This line of reasoning entertains a possibility that CORE and REM are licensed by a thematic relation with their verbs.

⁸² However, this analysis is not without any problem. As discussed by Liao (2011), such Relator-Linker analysis is confronted with two theory-internal puzzles. First, as Relator plays a role in mediating a predicative relation between a predicate and its argument, it is hard or even impossible to define what Relator is. Second, it is not clear why the subject-predicate relation is allowed, while the predicate-object relation is excluded. Despite such theory-internal puzzles, I think that this small clause analysis of predication is convincing in terms of its explanatory power.

(61) NP AT (Type I)

[Shu_{CORE}]^{AT}, Zhangsan xihuan kan [[Harry Potter]_{REM}]^{FOC}.
 book Zhangsan like read Harry Potter
 ‘As for books, Zhangsan likes to read Harry Potter.’

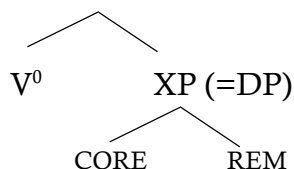
(62) VP AT (Type II)

[Kan [shu]_{CORE}]^{AT}, Zhangsan xihuan [kan [Harry Potter]_{REM}]^{FOC}.
 read book Zhangsan like read Harry Potter
 ‘As for books, Zhangsan likes to read Harry Potter.’

As alluded in Fanselow and Ćavar (2002:102, fn. 10) in (63), if one part (REM) of the DP merges in VP, the other part (CORE) of the DP is merged in a functional projection that is able to license the formal features of it. If the checking feature of REM can be ascribed to theta-role assignment in the VP domain, and two DP-parts, under the assumption that they are merged as a complex syntactic object, both check the similar features of the relevant functional VP. In this way, they share the same thematic role and are locally licensed in the VP domain. To concretize the discussion here, as shown in (64), it is assumed that when taken as a nominal argument of the verb, XP receives a theta role- A proper thematic relation is established.

(63) “[I]f an XP can be linked thematically to predicate P only if XP is merged in the project of P, then two XPs sharing a thematic role must be merged in the same maximal projection.” (Fanselow and Ćavar 2002:102, fn. 10)

(64) V⁰ establishes a proper thematic relation with DP



The proposed view in (64) fares well with Jin’s (2015) Generative Lexical approach to AT in Mandarin in a sense that both CORE (=AT) and REM are licensed by a thematic relation with the verb- CORE and REM are the arguments of a predicate, though REM is the

actual nominal argument of the predicate due to the theory-internal reason.⁸³

Summarizing, I argued that CORE and REM are merged as a bare predicative structure (XP), which can be taken by V⁰ to establish a proper thematic relation, as visualized in (64). The next challenging task is to elucidate how CORE and REM are realized in two different positions. In Section 5.2, I argue that this pertains to a particular copy-deletion mechanism manipulated by a feature-checking process in the computational system.

5.2 Fanselow and Ćavar (2002a): Distributed deletion approach

In Croatian, a DP is able to split away from some constituent it used to merge with. (65) is an instance of XP-split constructions in the sense that the DP *knjige* ‘books’ used to merge with the adjective *zanimljive* ‘interestingly’ as an intact XP, and splits away from it on the surface. [Van Riemsdijk \(1989\)](#) claims that the part of the XP in the sentence-initial position is moved out of the XP, with the remaining material stranded *in-situ*.

(65) XP-split constructions in Croatian

Knjige mi je Marijia zanimljive preporucila.
books me has Mariah interesting recommended
‘May has recommended interesting books to me.’

(qtd in [Fanselow and Ćavar, 2002](#), ex. 5b)

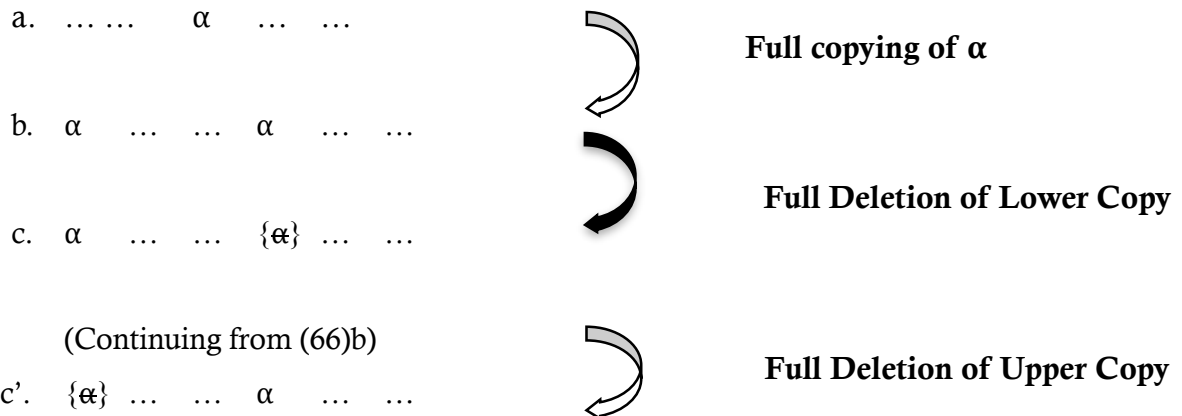
[Fanselow and Ćavar \(2002a\)](#) propose that if the copy & deletion approach to movement ([Chomsky 1995](#)) is implemented in a way that the PF-deletion operation can follow the copying operation of movement, this entertains a possibility of affecting both copies. Fanselow and Ćavar therefore argue for two possible modes of deletion of realizing chains phonologically in (66)c and (66)c’, and there is evidence showing that deletion is

⁸³ In addition, as argued in [Tang \(1998\)](#), bare small clauses in Mandarin are a lexical projection without any functional category, as exemplified in (i.). Tang argues that small clauses in Mandarin do not have a predicative head, and PRO or a XP can be the subject of the small clause.

(i.) Wo [_{NP} dang_i [_{VP} ta [_{v'} t_i [_{SC} PRO shagua]]]]
I consider he fool
‘I consider him a fool.’

able to affect the upstairs and the downstairs copy but in a partial way, which yields the split-XP construction.

(66) Types of deletion



For concreteness, consider two scenarios. In (67)a, XP and YP are merged as a complex NP, but on the surface, XP is realized in another position, whereas, in (67)b, both XP and YP are realized in two positions on the surface.

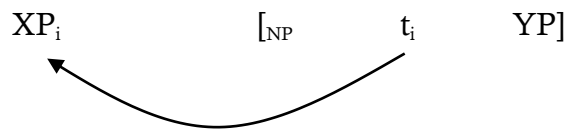
(67) XP-split construction

- a. XP surfaces in a sentence-initial position
 $[_{NP} \text{ XP } \text{ YP}] \rightarrow [_{NP} \text{ XP}] \dots [_{NP} \text{ YP}]$
- b. XP and YP surface in a sentence-medial position
 $[_{NP} \text{ XP } \text{ YP}] \rightarrow \dots [_{NP} \text{ XP}] \dots [_{NP} \text{ YP}] \dots$

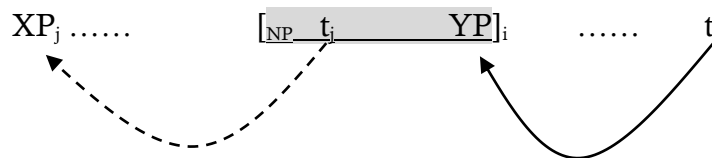
A rather feasible solution to the surface order is (67)a to postulate that XP undergoes sub-extraction to a higher position, as shown in (68)a. Nevertheless, if NP is an island, this sub-extraction is obligatorily banned. In addition, while pursuing the line of sub-extraction, we can posit that, as illustrated in (68)b, the XP-split construction be derived by NP movement, followed by sub-extraction of XP out of the NP. Nonetheless, the derivation violates a constraint extensively discussed in Müller (1998) for German, formalized as the Freezing Principle in (69), stating that sub-extraction of a constituent out of a moved XP is strictly forbidden. It follows that the scenario in (68)b is also ruled out.

(68) Hypothetical derivation of (67)

a. Sub-extraction (= (67)a)



b. Movement and sub-extraction (= (67)a)



(69) Freezing Principle

At S-structure, a trace t may not be included in a moved XP (i.e. an XP that binds a trace) if the antecedent of t is not included in YP.

To solve the stated problems above, Fanselow and Ćavar (2002a) argue that XP-split constructions have to resort to a particular copy-cum-deletion system. Following their proposed system, (65) is derived as illustrated in (70). In (70)a, *zanimljive* ‘interesting’ and *knjige* ‘books’ form a XP in the underlying structure, and the XP is completely copied and merged to a target position in (70)b. Through (70)c-d, deletion targets the part *zanimljive* in the moved copy, and subsequently deletion targets the other part *knjige* in the original copy. (70)e represents a resulting XP-split construction. The DD analysis elucidates XP-split constructions in two ways. First, there is no genuine ‘split’ construction. Two syntactic objects appearing in two different surface positions depends on how deletion operates. In addition, this analysis circumvents the problem stated in (68)a-b. In other words, under this analysis, no sub-extraction takes place. Second, this analysis readily captures \bar{A} -properties. As shown in (70)b, copying is a manifestation of copy and movement.

(70) The DD analysis of (65)

a. **Underlying structure**

mi je Marijia [_{XP} zanimljive knjige] preporucila
 me has Mariah interesting books recommended

b. **Complete copying of XP**

[_{XP} zanimljive knjige] mi je Marijia [_{XP} zanimljiv knjige] preporucila
 interesting books me has Maria interesting books recommended

c. **Partial deletion in the upper copy**

[_{XP} ~~zanimljive~~ knjige] mi je Marijia [_{XP} zanimljive knjige] preporucila
 interesting books me has Maria interesting books recommended

d. **Complementary deletion in the lower copy**

[_{XP} ~~zanimljive~~ knjige] mi je Marijia [_{XP} zanimljive ~~knjige~~] preporucila
 interesting books me has Mariah interesting books recommended

e. **Surface structure**

knjige mi je Marijia zanimljive preporucila
 books me has Mariah interesting recommended



Nevertheless, it should be noted that deletion is not randomly executed at PF, and instead, it is guided by a need to check strong operator features of functional projections, as summarized in (71). According to (71), operator positions that are checked by strong features must be filled by phonetic material that bear the corresponding operator features. This implies an XP consisting of two syntactic objects can be checked by two different operator features in two positions respectively.

(71) Suppose $C = \langle C_1, C_2 \rangle$ is formed because a strong feature of H has attracted XP and suppose that H checks the operators features $f_1 \dots f_k$ of XP. Then the categories bearing $f_1 \dots f_k$ must be spelt out in C_1 . (Fanselow and Ćavar 2002a, ex. 62)

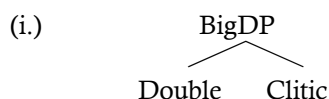
Let us consider a converging derivation of the XP-split construction in (72). In (72)a, H^1 is able to attract p only, as p is closer to H_1 rather than q . After p is checked by H_1 , α^p has to be phonologically spelt out at $[\text{Spec}, H^1]$, as illustrated in (72)b, and α^p does not block further attraction of q . The next copying step moves [_{XP} α^p [β γ]^q] to $[\text{Spec}, H^2]$, where q is able to check the strong operator feature of H^2 and it has to be phonologically spelt out. The derivation eventuates in the PF deletion, as visualized in (72)d. It is shown that only $[\alpha]$ in $[\text{Spec}, H^1]$ and $[\beta \gamma]$ in $[\text{Spec}, H^2]$ that check the operator features must be phonologically spelt out while other copies are uniformly subject to PF deletion.

(72) A converging derivation of an XP-split construction

- a. $[H^2 \dots [H^1 \dots [_{XP} \alpha^p [\beta \ \gamma]^q]]]$
- b. $[H^2 \dots [[_{XP} \alpha^p [\beta \ \gamma]^q] [H^1 \dots [_{XP} \alpha^p [\beta \ \gamma]^q]]]$
Feature checking
- c. $[[_{XP} \alpha^p [\beta \ \gamma]^q] [H^2 \dots [[_{XP} \alpha^p [\beta \ \gamma]^q] [H^1 \dots [_{XP} \alpha^p [\beta \ \gamma]^q]]]]]$
Feature checking
- d. $[[_{XP} \alpha^p [\beta \ \gamma]^q] [H^2 \dots [[_{XP} \alpha^p [\beta \ \gamma]^q] [H^1 \dots [_{XP} \alpha^p [\beta \ \gamma]^q]]]]]$

For concreteness, as discussed in Section 3, the left part (CORE) of ZP is interpreted as topic, whereas the right-hand part (REM) is a focus. Adopting [Abou's \(2010\)](#) system that topic and focus are not part of narrow syntax but must be added to the linguistic expression once computed by the C_{HL} . As visualized in (73)a, suppose that α and β are merged as a complex structure (XP), and are assigned a [Topic]-feature and a [Focus]-feature respectively in the numeration. As the derivation proceeds, XP is copied and merged to [Spec, FocP], where the [Focus]-feature parasitic on α^{Foc} is checked, and subsequently the XP is further copied and internally merged to [Spec, TopP], where the remaining [Topic]-feature on β^{Top} is checked off. Under Fanselow and Čavar's system (See (71)), α and β must receive phonetic realization because they check the corresponding strong features on $Focus^0$ and $Topic^0$ respectively, and the remaining copies are subject to mandatory PF-deletion. (73)b represents the resulting XP-split structure.⁸⁴

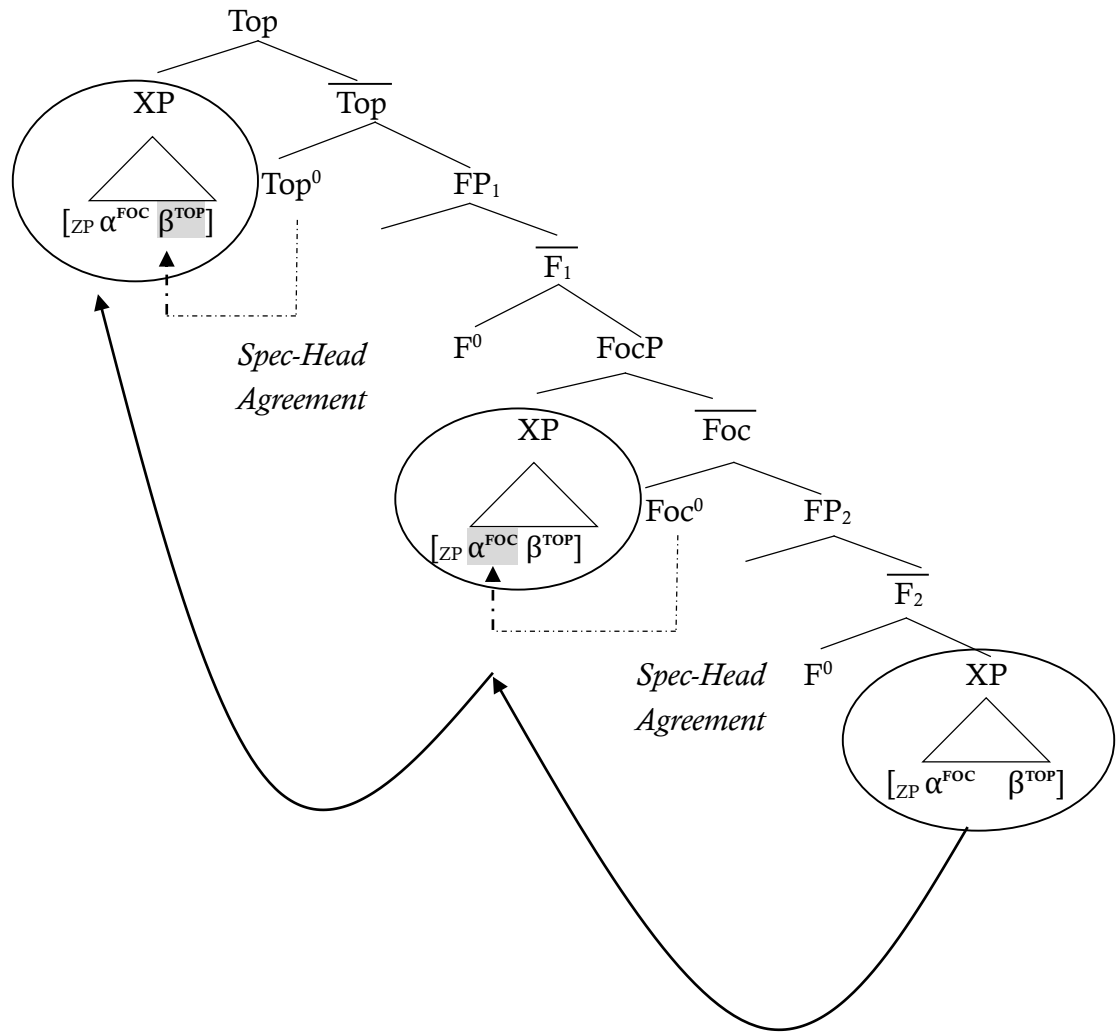
⁸⁴ The proposed analysis in (73) is similar to [Cecchetto's \(1999\)](#) analysis of clitic right dislocation in two regards (Wei-wen Roger Liao, p.c.). First, BigDP (consisting of two parts), as shown in (i.), is generated in the argumental position of the verb. Second, the following steps of the derivation are forced by a (Western) Romance condition on cliticization in general: that is, the clitic cannot move as a head, and, instead, the Big DP has to move as an entire category to a Spec position of a functional projection outside of VP, ArgoP for example, as visualized in (iii.). The steps of movement are similar to the derivation of the XP-split construction. I think the core idea of the BigDP analysis is to capture a referential relation between a clitic and its DP referent, similar to the bare predicative structure that establishes a predicative relation between CORE and REM. Nevertheless, criticisms about the bare predicative structure also apply to the BigDP analysis here: that is, it remains not unclear what BigDP is in grammar. So is the bare predicative structure. I will leave this issue aside for expository reasons.



- (ii.) Clitic doubling in Romanian
 $Lo_i \quad odia \quad Maria, \quad Gianni_i.$
 him hates Maria Gianni
 'It is Maria who hates Gianni.'

(73) Hypothetical derivation of XP-split constructions under the DD analysis

a.

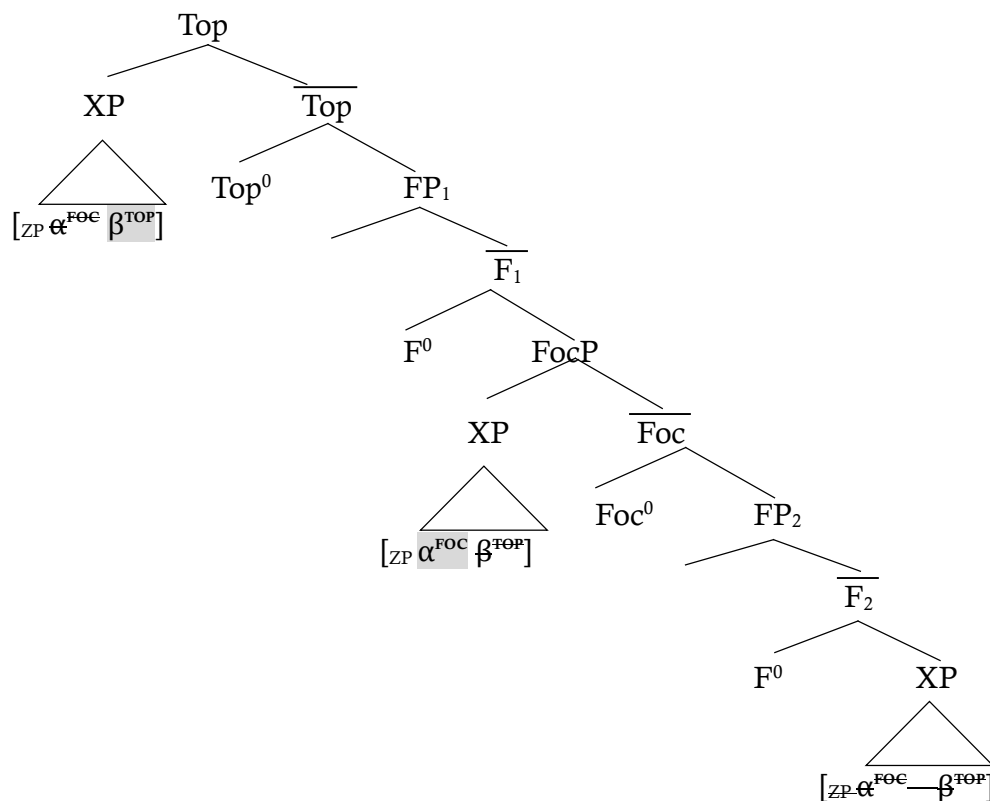


(iii.) The proposed analysis of (ii.)

[_{IP} *pro lo odia* [_{FocusP} *Maria* Focus⁰[_{TopicP} *Gianni* Topic⁰ [_{AgroP} [_{BigDP} *t_{Gianni}t_{lo}*] Agr⁰ [_{VP} *t_{Maria}* . . . *t_{Big DP}* . . .]]]]]

The discussion regarding the BigDP analysis of CLRD here is heavily simplified. For instance, as argued by Cecchetto, a major difference between CLLD (clitic left dislocation) and CLLD is that a right dislocated XP ends in the Spec position of a VP peripheral TopP, where a left dislocated XP in the Spec position of an IP-peripheral TopP.

b.



To sum up, I argue that the DD analysis can be motivated to capture the properties of AT NP (Type I) and AT VP (Type II) without any redundant postulation. As an illustration, this DD analysis is also able to account for Multiple NP-split constructions in German in a unified way. (74)a represents a canonical sentence in German, whereas (74)b is an instance of Multiple split-NP topicalization (MSNT) in German, where the left-hand part is topicalized, and the right-hand part bears focal stress. What makes thought-provoking the surface difference between (74)a and (74)b is that if (74)a is an underlying structure where *keine* ‘no’ and *Bücher* ‘books’ are merged as a complex structure, one has to explain the puzzle why in (74)b, *keine* is discontinuously separated from *Bücher* on the surface.

(74) Multiple NP-split topicalization in German

- a. Er hat keine Bücher gelesen
 he has no books read
 ‘He hasn’t read any abooks.’

- b. Bücher er hat keine gelesen
 books he has no read
 ‘As for books, he hasn’t read any.’

To account for the fact that MSNT is island-sensitive and a connection exists between two parts of a discontinuous phrase, [Ott \(2009\)](#) adopts a DD analysis of (74)b, as in (75). In (75)a, two NPs are merged as a complex NP, and *keine* bears a [Focus]-feature, whereas *Bücher* bears a [Topic]-feature. Under the DD analysis sketched above, the full copy of the complex NP merges to [Spec, TopP], where *Bücher* has to be pronounced because it bears a strong [Top]-feature that checks a corresponding [Top]-feature on Top⁰, whereas the [Focus]-feature of *keine* is checked in-situ and thus is pronounced.

(75) The proposed derivation of (74)b

- a. [NP *keine*_[Foc] *Bücher*_[Top]] ⇒
 b. [TopP [NP ~~*keine*~~_[Foc] *Bücher*_[Top]].....[NP *keine*_[Foc] ~~*Bücher*~~_[Top]]]

One persistent question, as one might raise, is what triggers the split. One complication behind this question is movement (a Spec-Head configuration) and Agree-checking are accessible in narrow syntax, the latter does not trigger the split. This predicts no movement, and formal features can be in-situ satisfied by establishing a proper Agree relation with their corresponding Probes. Let us assume that an XP is endowed two features which are [+Int(erpretable)] but occupies a position that does not allow it to be fully interpreted at the interface, leading to a crash. To become fully interpretable, such XP has to move to a position which is able to fill in the missing specification. In this case, overt movement is obligatory. Chomsky argues that all optional syntactic operations are constrained in a way that they can apply if their application has a direct effect on the interpretation of the target output at the interface, as formalized as *Interface Effect Condition* in (76).

(76) Interface effect condition ([Chomsky 2001:60-1](#))

Optional operations can apply only if they have an effect on outcome.

Granted the condition in (76), I suggest that when formal features are assigned to a

lexical item in the numeration and they are [+Int], they are checked by their corresponding functional projections along the clausal spine of ν P/CP. It follows that movement is necessary, as these feature-checking procedures have interpretative effects on the lexical items. This line of thinking justifies the hypothetical derivation shown in (73)a-b.

5.3 Two peripheries: Two syntax-discourse interface domains

Crucial in Fanselow and Ćavar's (2002a) DD analysis is that strong operator features determine the spell-out of copies at PF. However, a core question to raise is what these operator features are. In this section, I assume that these features encode information-structural notions, particularly the [Topic]-feature and the [Focus]-feature. As introduced in Chapter 1, under the cartographic approach (Rizzi 1997; Cinque 1999), there is a transparent mapping between form and interpretation, and topic and focus are formal features that can be syntacticized in the different interpretative domains. This view is reinterpreted as *Discourse Configurational Hypothesis* in (77).

(77) Discourse Configurational Hypothesis

The information structural properties of constituents in the left periphery result from the fact that particular structural configurations are associated with information structural concepts.

(Skopeteas and Verhoeven 2012, p. 297, ex. 2)

There has been a rich body of literature attempting to articulate the left periphery of CP and succeeding in offering a detailed cartographic map of the structure of CP (See Cinque and Rizzi 2010, Slonsky 2010, and Rizzi 2013 for an overview of cartographic studies). Relevant to AT in Mandarin is that AT involves a TOP-FOC dependency, and how this dependency can be syntactically represented calls for some space for discussion. As argued in previous studies (Rizzi 1997, 2004a, 2004b; Benincà and Poletto 2004), the CP domain hosts a set of recursive topic and focus, as represented in (78). Belletti (2004) also proposes that VP also shares a similar periphery that contains a number of positions that have a discourse-related nature, especially topic and focus, as illustrated in (79). The existence of two peripheries opens a possibility that topic and focus are able to occur in the CP layer or the TP layer altogether or separately.

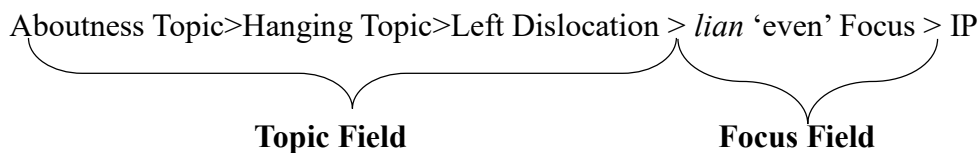
(81) Inner focus

Women mingtian [zhurou]^{FOC} chi, [niurou]^{FOC} bu chi.
we tomorrow pork eat beef not eat

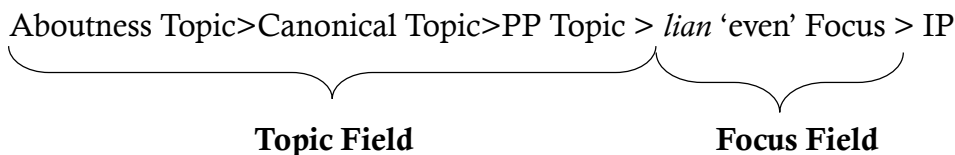
- a. ‘Tomorrow we will eat the pork, but not the beef.’
- b. ‘Tomorrow we will eat pork, but not beef.’

Nonetheless, the topography of CORE (AT) and REM (Focus) in Chapter 2 indicates that they do not have designated positions, and the only restriction imposed on their presence is the sequence TopP>FocP. At first glance, it seems that the existence of two peripheries is able to account for such distribution but a primary question is why AT has to be accompanied by focus. Given such topography, AT is not always in the highest topic position, counterexemplifying [Badan and Del Gobbo’s \(2011\)](#) hierarchy of topics in (2) and Cheung’s in (6), repeated in (82) and (83). It follows that such TOPIC-FOCUS dependency in XP-split constructions is blind to the hierarchy.

(82) Topic field and focus field the left periphery of CP in Mandarin ([Badan and Del Gobbo 2011](#))

Aboutness Topic>Hanging Topic>Left Dislocation > *lian* ‘even’ Focus > IP


(83) Topic field and focus field the left periphery of CP in Mandarin ([Cheung 2008](#))

Aboutness Topic>Canonical Topic>PP Topic > *lian* ‘even’ Focus > IP


I suggest that, as already advocated in several studies ([van Hoof 2005](#); [Ott 2009, 2011, 2015](#); [Fanselow and Ćavar 2002a](#)), ‘split’ in NP-split constructions is triggered by a need to satisfy the semantic-discoursal role of the NP. Precisely, what makes a complex NP split is because **it is assigned two information-structural features, the [Topic]-feature and the [Focus]-feature, in the numeration that have to be checked in [Spec, TopP] and [Spec, FocP] respectively**. This amounts to showing that there is some syntax-internal matching operation that is carried out to meet the interpretative need imposed by information structure at the interface. Furthermore, the sequence TopP>FocP is already syntacticized

along the clausal spine of ν P/CP. They constitute an inventory of informational-structural formal features available in the lexicon (Aboh 2010), and the computation system dictates how they can be checked off in the course of derivation, given a layer of functional projections in two peripheries.

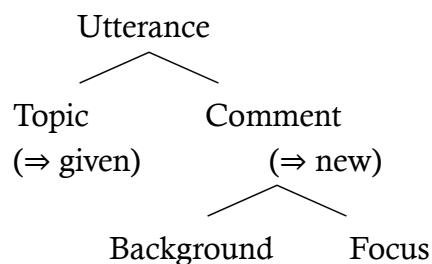
In light of the lack of designated positions for AT, I argue that topic and focus, when merged as formal feature to a NP complex, do not receive designated positions but the recursive nature of topic followed by focus allows these two formal features to be checked along the clausal structure from the periphery of ν P to that of CP. As illustrated in (84), TopP and FocP are available in two peripheries, but it should be noted that TopP is not necessarily adjacent to FocP in the same periphery or in two peripheries.

The sequence involves a topic-focus syntactic structure, which is represented by the Topic-Comment partition at the syntax-discourse interface; that is new information is conveyed by the Comment, while Topic is associated with given information. Furthermore, the Comment can be further articulated in the way that the Comment can be partitioned to consist of an informative (i.e. focused) and a background part (Jackendoff 1972), as schematized in (85).

(84) TopP and FocP in two peripheries

[CP...[_{TopP} TOP]...[_{FocP} FOC]... [TP. [_{TopP} TOP]...[_{FocP} FOC] [ν P.....]]

(85) **Topic-Comment partition at the syntax-discourse interface**



As pointed out in Chapter 3, CORE and REM are allowed to occur in two ex-situ positions in the same periphery or across two peripheries. Additionally, it is worth noting that the inner (TP-level) FocP is different from the outer (CP-level) FocP, if we follow Tsai's (2015a) system, as discussed in (80) and (81). One important consequence arising from this asymmetry suggests that if a XP is assigned a [Focus]-feature, whether it is interpreted as a contrastive focus or a canonical focus depends on its checker in the derivation, which also applies to a XP assigned a [Topic]-feature. This line of thinking

offers two implications: on the one hand, in the numeration a XP is assigned an unspecified [Focus]-feature or an unspecified [Topic]-feature, and on the other hand, the designated position of FocP or TopP decides its interpretation.

In Section 6, I will illustrate how the three types of AT can be derived within the same set of principles mentioned above.

6. The derivation

Given the proposed system in Section 5, I will illustrate the derivation of the three types of AT in this section. Again, recall the discussion from Chapter 2 that NP AT (Type I) and VP AT (Type II) display \bar{A} -properties, which are treated as an indication of \bar{A} -movement, while VP AT (Type III) is devoid of evidence for movement. This asymmetry suggests two operations, Merge and Move, available for the derivation of AT.

6.1 AT NP (Type I)

(86)a-b are two instances of AT NP (Type I). The major difference between (86)a and (86)b lies in the dislocation of REM.

(86) AT NP (Type I)

- a. Ex-situ CORE and the in-situ REM

[Hua_{CORE}]^{AT}, Zhangsan dagai hui mai [meiguihua_{REM}]^{FOC}.
 flower Zhangsan probably can buy rose
 ‘As for flowers, Zhangsan probably will buy roses.’

- b. Ex-situ CORE and ex-situ REM

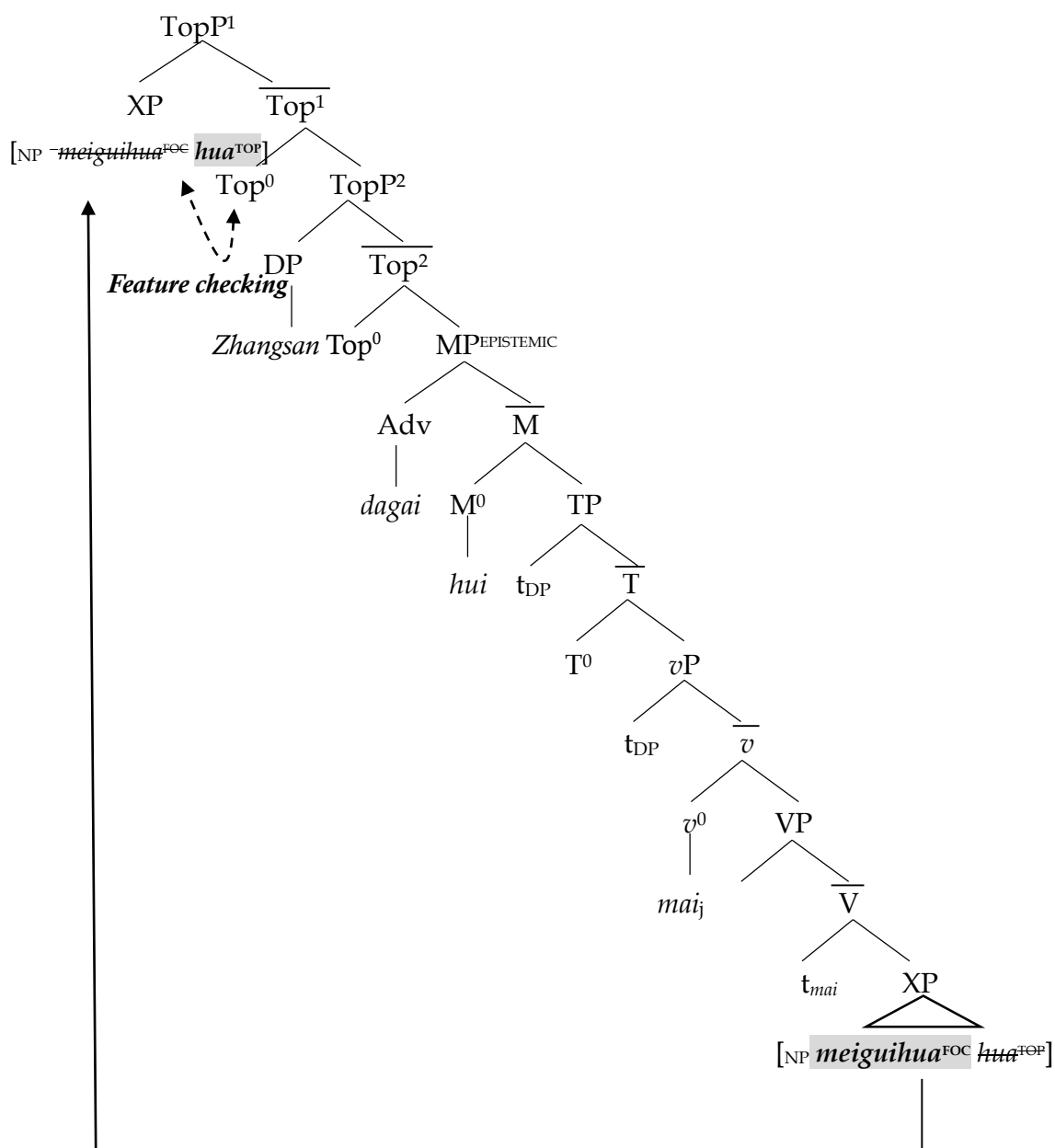
Zhangsan dagai [hua_{CORE}]^{AT} mingtian [meiguihua_{REM}]^{FOC} hui
 Zhangsan probably flower tomorrow rose will
 mai, ziluolan bu hui mai.
 buy violet not can buy
 ‘As for flowers, Zhangsan might buy roses tomorrow, not violets.’

(87) instantiates the derivation of (86)a.⁸⁷ It is illustrated that CORE *hua* ‘flowers’ and REM *meiguihua* ‘roses’ are merged as a bare predicative structure XP in the argumental position, serving as the nominal argument taken by the verb *mai* via a proper thematic relation. Meanwhile, CORE and REM are assigned two strong formal features, the [Topic]-feature and the [Focus]-feature respectively, in the numeration. Following Tsai and Feng’s (2006) account that the sentence-final position is a default focus position, the [Focus]-feature is (marked in shades) in-situ checked off.⁸⁸ As the [Focus]-feature is already checked, XP is accessible to a subsequent feature-checking process. In the next step, the bare predicate structure XP is copied and the copy is internally merged to [Spec, TopP₁] in order for the remaining [Topic]-feature to be checked via a Spec-Head relation with Top⁰. Under the DD analysis, the syntactic objects with checked strong features have to be phonologically spelt out, with other copies being deleted at PF. It follows that CORE and REM receive phonetic realization, which can be regarded as a reflex of the feature-checking processes.

⁸⁷ Note that I follow Tsai’s (2015a, 2015b) proposed system in assuming that topic-prominence can be captured by postulating that the D(efiniteness)-operator, when merged to the DP, has to be checked by raising the DP to [Spec, TopP]. This topic of such nature is labelled **TopP²**, in contrast with **TopP¹**, which offers a landing site for CORE.

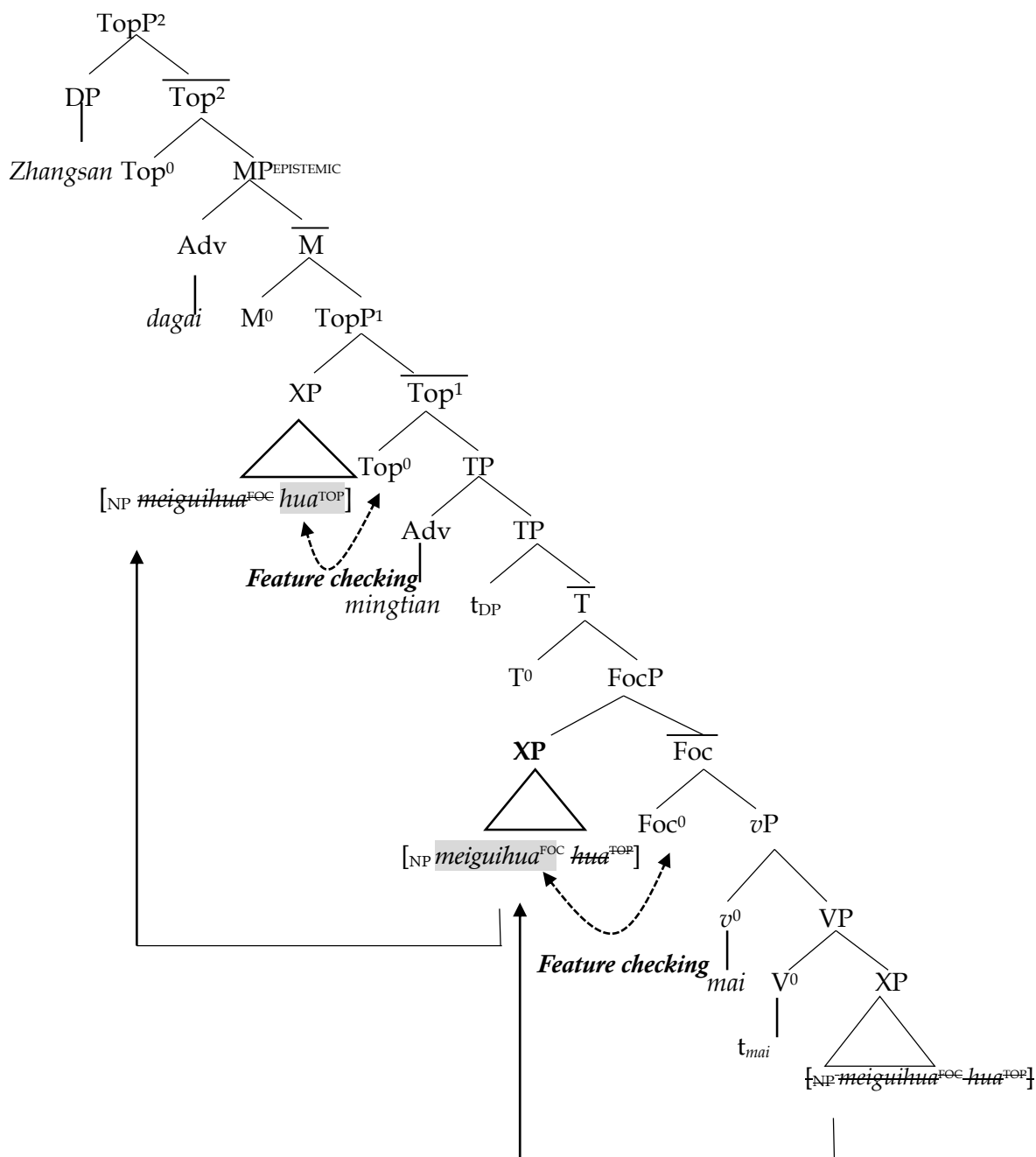
⁸⁸ Tsai and Feng (2006) claim that the NSR is assigned to the rightmost constituent in a clause. Thus, syntactic structure is consistently aligned with its prosodic structure. Xu (2004) also argues for a similar view by claiming that the sentence-final position is a default focus position.

(87) The proposed derivation of (86)a (the parts marked in shades mean that they are checked by their corresponding checkers).



Along the line of thinking pursued above, the derivation of (86)b diverges from (86)a in the merger of TopP and FocP along the clausal spine. As illustrated in (88), the bare predicative structure XP is completely copied and is merged to [Spec, FocP] in the left periphery of vP , where the [Focus]-feature on REM *meiguohua* ‘roses’ is checked, and XP is further copied and internally merged to [Spec, TopP₁] in the course of derivation. Under the DD analysis, only CORE and REM bearing the strong features receive phonetic material, and other copies are subject to deletion at PF.

(88) The proposed derivation of (86)b (the parts marked in shades mean that they are checked by their corresponding checkers).



The derivation of two instances of AT NP (Type I) has shown that the checking of strong features determines the spell-out of copies at PF, yielding a XP-split construction in which CORE and REM are discontinuously spelt out. It has further shown that the information-structural interpretative properties of CORE and REM do not pertain to the connection between CORE and REM. Rather, their predicative relation is determined by the bare predicative structure at the outset of derivation, whereas the information-structural interpretative properties are obtained due to the checking of strong information-structural

features in their corresponding functional projections (TopP and FocP).

6.2 AT VP (Type II)

(89) is an example of AT VP (Type II). Different from NP AT (Type I), AT VP (Type II) enforces lexical identity effects, according to which the verb in AT VP has to be identical to the verb in the host clause. Besides, the F-domain in AT VP (Type II) has to include the VP in the host clause, different from the F-domain in NP AT (Type I) which only includes REM. I will show that VP AT (Type II) in (89) can be derived within the same set of principles for NP AT (Type I).

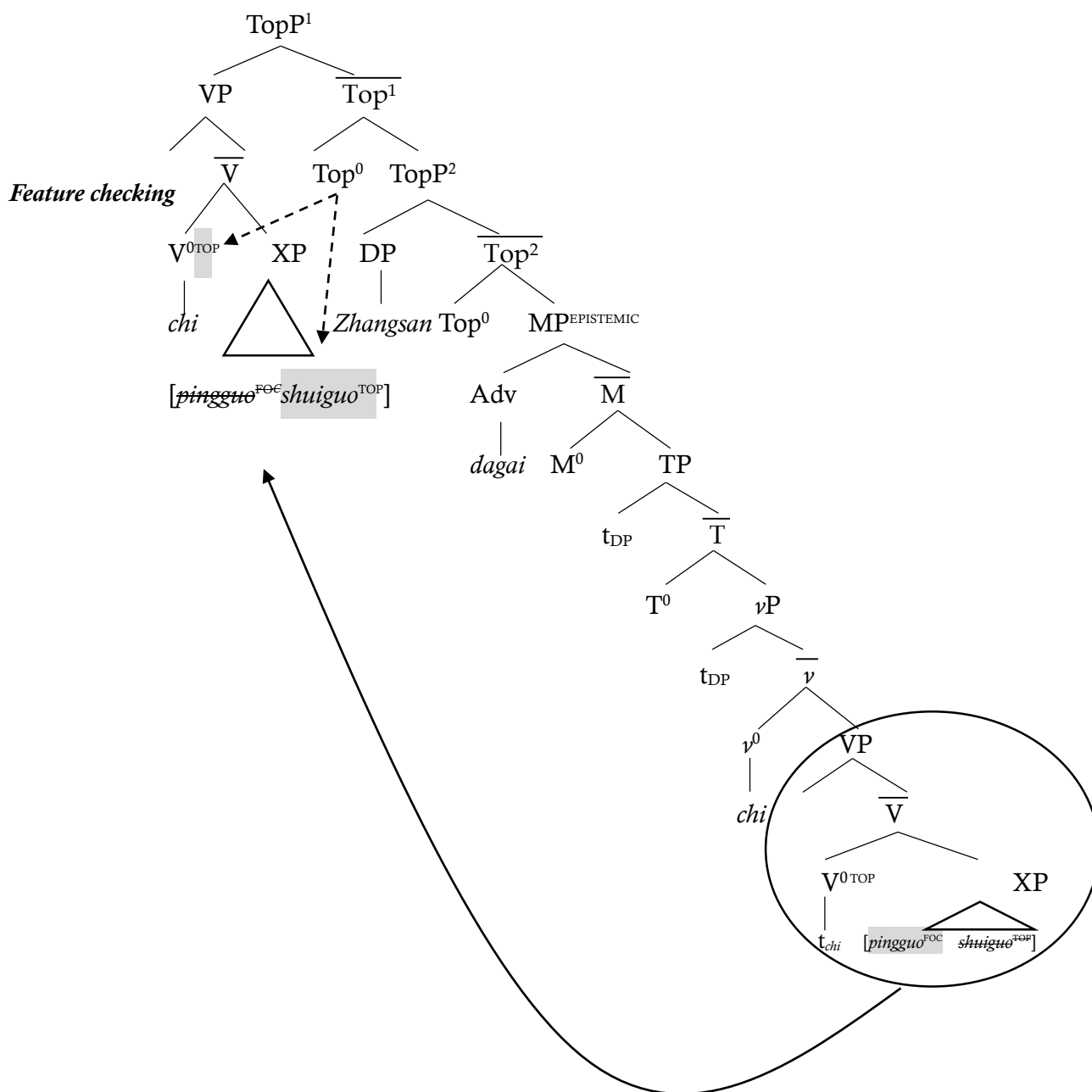
(89) VP AT (Type II)

[_{VP} Chi [shuiguo]_{CORE}]^{AT}, Zhangsan dagai zhi ai [_{VP} chi
eat fruit Zhangsan probably only like eat
[pingguo]_{REM}]^{FOC}.
apple

‘As for eating fruits, Zhangsan probably only likes to eat apples, (not eat others).’

(90) instantiates the derivation in (89). Note that CORE and REM are merged as a bare predicative structure XP. Similarly, they are assigned a [Topic]-feature and a [Focus]-feature respectively in the numeration. Nevertheless, AT VP (II) involves verb doubling. Cheng and Vicente (2013) argue that verb doubling involves verum focus of the event argument, and the doubled verb establishes a proposition as a topic, on which a comment can be made. They further add that focalizing the event argument inside the comment is to assert that the event in question did take place. In this view, (89) can be interpreted as in a context that one knows the fact that *Zhangsan* likes to eat apples. As illustrated in (90), VP with the predicative structure is copied to [Spec, TopP¹]. It should be noted that the [Focus]-feature is already checked by the default sentence-final focus position (Xu 2004; Tsai and Feng 2006). While internally merged to [Spec, TopP¹], the [Topic]-feature is checked via a Spec-Head relation with Top⁰.

(90) The proposed derivation of (89)a



As one might recall, the strength of formal features determines whether copies have to be spelled out or not. Thus, CORE and REM have to be phonologically spelled out because the strong information-structural features assigned to them have been checked in the course of derivation. Nevertheless, it remains not clear why the verb in VP AT (Type II) is exempt from PF deletion. I suggest that there are two possible alternative analyses. One is to adopt Landau's P-Recoverability in (91). It is observed that *ah* can incarnate Top⁰, and according to (91), the material in [Spec, TopP] can be phonologically spelled out. This might explain why the verb *chi* in [Spec, TopP¹] is phonologically spelled out. The other analysis is to claim

that VP is merged with a [Topic]-feature that has to be checked in a proper corresponding position, say [Spec, TopP].

(91) P-Recoverability

In a chain $\langle X_1 \dots X_i \dots X_n \rangle$, where X_i is associated with phonetic content, X_i must be pronounced. (Landau 2006, p. 56, ex. 49)

One remaining question is how to account for the fact that individual predicates resist serving as VP AT (Type II), as evident in (92). I suggest that the ungrammaticality does not relate to VP AT (Type II). Rather, it might be because VP AT (Type II), to some extent, involves the verum focus, and there is no event argument serving as the import for focalization in (92). Krazter (1996) maintains that stage-level predicates are different from individual predicates in having the so-called Davidsonian event argument in their argument structure. As discussed in (90), verb doubling involves the focalization of the event argument in order to import a proper information-structural interpretation. It follows that the missing event argument of the stage-level predicate *xihuan* in (92) causes the derivation to crash.

(92) VP AT (Type II) with the individual-level predicate *xihuan* ‘like’

* $[_{VP} Xihuan [hua_{CORE}]]^{AT}$, Zhangsan [xihuan [meiguihua_{REM}]]^{FOC}.

like flower Zhangsan like rose

Intended \Rightarrow ‘As for liking flowers, Zhangsan likes roses.’

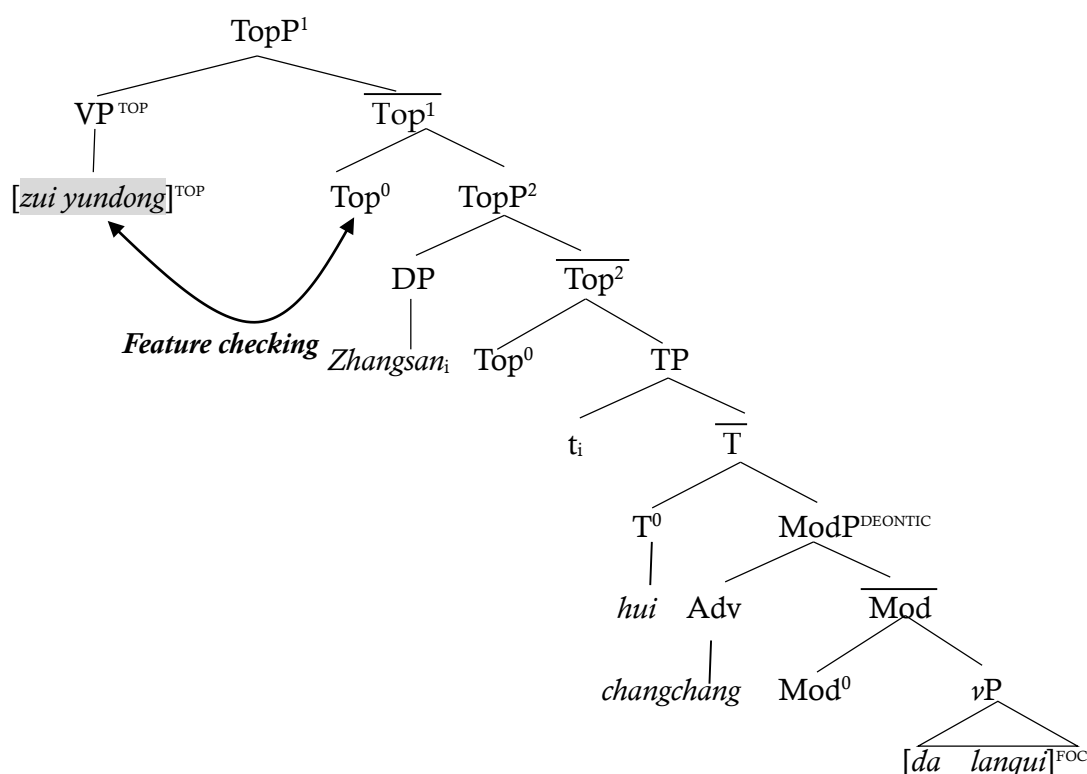
6.3 AT VP (Type III)

Different from NP AT (Type I) and VP AT (Type II), VP AT (Type III) does not exhibit lexical identity effects and evidence for movement. I argue that AT VP (Type III) is derived by means of external Merge. (94) illustrates the derivation of (93). It is shown that two VPs are assigned two formal features, the [Topic]-feature and the [Focus]-feature, in the numeration. Their features have to be checked in two different positions. As a result of the feature-checking process, they have to be phonologically spelt out.

(93) VP AT (Type III)

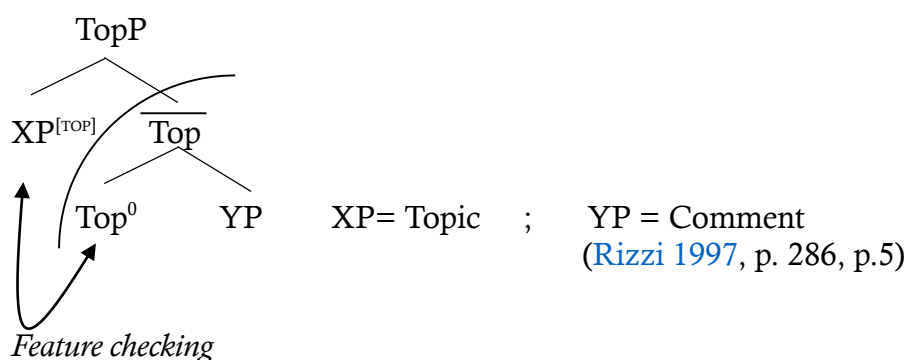
[_{VP} **Zuo** yundong]^{AT}, Zhangsan hui changchang [_{VP} da lanqiu]^{FOC}.
do exercise Zhangsan can often play basketball
‘As for doing exercise, Zhangsan will often choose to play basketball.’

(94) The proposed derivation of (93)



Nevertheless, as the alert reader might notice, the proposed derivation in (94) raises a question. It is obvious that the derivation does not elucidate the connectedness between the VP in the topic position and the VP in the host clause. In the case of NP AT (Type I) and VP AT (Type II), it is argued that the misconceived notion of ‘aboutness’ is characterized by a predicative relation between CORE and REM (See Section 5.1), and their information-structural interpretations, as a topic and a focus, result from successive feature-checking processes that drive the derivation. This predicative relation is apparently absent in AT VP (Type III). Instead, the so-called *aboutness* reading ‘as for...’ has to do with the inherent interpretative routine of TopP, according to which XP is interpreted as topic whereas YP is interpreted as comment, as illustrated in (95).

(95) The interpretative routine of TopP



It should be noted that XP does not necessarily have to be a moved constituent. Rather, the merge of XP with a [Topic]-feature to [Spec, TopP] drives the interpretative computation; XP enters a Spec-Head relation with Top⁰ for a feature-checking process. XP has to be phonologically spelt out according to the DD analysis advocated in this chapter. Merge as a means of satisfying a [Topic]-feature has been proposed in previous studies. To account for topicality in Mandarin, Tsai (2015a) claims that there are two ways of checking the peripheral features that trigger obligatory topicalization. Peripheral feature checking can be implemented by externally merging a D(efiniteness)-operator to the Top head that is able to bind a nominal, as shown in (96), where the D-Op contributes to the definite reading of the NP *hua* ‘flower’, or by internally merging (i.e.) a DP to [Spec, TopP]. Tsai adds the former is only allowed in Chinese-type languages due to the analytic nature of Chinese-type languages.

(96) The D-operator binds the nominal

- a. [D_x-Top]... .. N(x)...
- b. [D_x-Top]_{[TP} hua(x) kai le]
 - flower blossom INC
 - i. ‘The flower is blossoming!’
 - ii. *‘Flowers are blossoming’

It follows that Mandarin entertains two possibilities of feature checking by External Merge (base generation) or Internal Merge (movement).

6.4 Summary

In this section, I have illustrated the derivation of the three types of AT. NP AT (Type I) and VP AT (Type II) represent instances of Split Topicalization commonly discussed in German, while VP AT (Type III) is an instance of Non-Split Topicalization. It follows that AT endowed with a particular information structure, a topic followed by a focus, results from feature checking processes over the course of derivation. In addition, the two information structural features are inserted in the numeration. In Section 7, I will discuss several implications arising from the proposed analysis of AT for the syntax-discourse interface.

7. AT at the syntax-discourse interface

In this chapter, I have argued that NP AT (Type I) and VP AT (Type II) represent two instances of Split Topicalization in the sense that CORE and REM, when merged as a bare predicative structure, surface discontinuously in two positions. Following the DD analysis in [Fanselow and Ćavar \(2002\)](#), the apparent split is closely tied to the strength of information-structural formal features that have to be checked off over the course of derivation. By contrast, VP AT (Type III) represents an instance of Non-Split Topicalization in the sense that VP AT and the VP in the host clause do not form a constituent, and are assigned two information-structural formal features respectively in the numeration. Their features are checked off by means of external Merge in the corresponding positions. The central generalization from this chapter is that the interface properties of AT starts with the numeration.

Despite there being two types of derivation of AT, they share a set of operations manipulated by the computation system. The proposed analysis of AT offers the following implications for the syntax-discourse interface. First, under the proposed DD analysis, the strength of operator features determines the spell-out of copies. It follows that discourse categories are present in the lexicon as formal discourse-related features, which can be assigned to a set of lexical items in the numeration and drive the derivation. As the derivation unfolds, these lexical items have to establish a proper Spec-head agreement with the corresponding functional heads in order for the uninterpretable features to be checked off. On this view, information structure is predetermined in the numeration, a view argued in [Abouh \(2010\)](#) in (97).

(97) Aboh's formulation of information structure in the computation

A numeration N pre-determines the Information Structure of a linguistic expression.

(Aboh 2010, p.14 ,ex. 2)

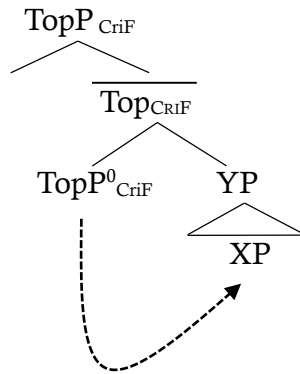
This view successfully resolves the grave problem of Chomsky's (1995:228) *Inclusiveness Condition*, which bans the introduction of features not present in the lexicon at syntax. For example, a syntactic view argues for FocP in the left periphery, which encodes the formal feature [+Focus], and stress can be treated as a reflex of the [+Focus] at PF (See Rizzi 1990, 1997; Cinque 1999; Molnár & Winkler 2010, a.o.). Nonetheless, this view is problematic, if interpreted under the *Inclusiveness Condition*. A major problem with this assumption is that the semantic features, such as [+Focus], and the phonological features, such as stress, cannot be justified by *Full Interpretation Principle* (Chomsky 1986), stating that each element at PF and LF level must be licensed and interpretable (Chomsky 1995:216). Szendrői (2001) also claims that this feature-based approach apparently violates Chomsky's (1995) *Inclusiveness Principle*, because stress is not included in the lexicon if it is regarded as a reflex of focus. Concretely speaking, the fact that the F-marked constituent has a focus interpretative property at LF and is simultaneously spelt out with stress at PF poses a direct challenge to the Y-model of grammar, according to which PF and LF are two independent components and are blind to 'properties' of other components. Nevertheless, the DD analysis advanced in this chapter lends weight to the view that these information structural features are assigned to lexical items in the numeration and drive the syntactic derivation, successfully circumventing the problem stated here.

Second, the proposed DD analysis indicates that XP-split constructions are derived as a result of successive feature-checking process. The constituents bearing the discourse-related features must end up in a local configuration with the relevant functional heads that encode the matching features- the DP with a [Topic]-feature has to be checked off by Top^0 via a Spec-Head relation. Such configuration is constrained by the Criteria, which requires that a Spec-Head relation between the criterial functional head (Top^0 , Foc^0 , Q^0 , R^0 ...) and the corresponding features of the relevant class. It should be noted that the Criteria operates as the trigger for movement, manifesting an attraction property. As claimed by Rizzi (2006), \bar{A} -movement is associated with interpretative properties triggered to satisfy criterial features. For concreteness, X_{CrIF} is part of the numeration and triggers an internal search for XP_{CrIF} ; subsequently, XP_{CrIF} undergoes internal merge/ \bar{A} -movement

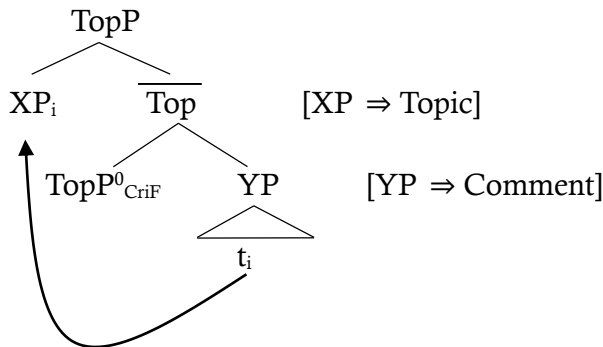
to [Spec, XP_{criF}], as visualized in (98). Such one-to-one mapping between syntax and information structure is sanctioned by a correspondence between the criterial feature triggering movement and the interface properties of the moved constituent that is assigned a discourse-related feature.

(98) The transparent mapping between syntax and interpretation of Top and Comment

a. Probe-Goal Agree



b. Internal Merge



Third, the distribution of AT lends weight to the recursive nature of topic in the ν P periphery and the CP periphery, as argued in Rizzi (1997). As represented in Section 6, the peripheral zone of CP tolerates the existence of more than one topic, and one moving across the other does not induce any intervention effect, which can be ascribed to the recursive nature of topics. Also, though the information-structural features are assigned to lexical items in the numeration, they have to be checked off along the peripheral backbone of ν P and CP. The distribution of AT is already predicted by the peripheral positions in the ν P layer and the CP layer, where AT and the F-constituent are allowed to occur.

Fourth, the proposed DD analysis shows that AT represents itself as a misleading term. The notion of ‘aboutness’ has to be detailed in two regards. On the one hand, there is a predicative relation CORE and REM in syntax, and CORE and REM are assigned two

information-structural features in the numeration. On the other hand, they are interpreted according to the interpretive routines of TopP and FocP.

The first issue of AT suggests that the lexicon determines information structure, and functional projections (particularly TopP and FocP) in two peripheries determine the distribution of lexical items that bear information-structural features, such as topic and focus. In Chapter 3 and 4, I will address the second issue about the syntax of nonsententials in Mandarin. Slightly from the view advanced here that the lexicon determines the interface properties of lexical items, the syntax of nonsententials shows that certain discourse notions are external to the numeration, such as the discourse role of SPEAKER and HEARER/ADDRESSEE; to wit, they are not formal features. Despite their external nature, they can be substantiated in the left periphery of CP, evidenced by a set of discourse-related functional projections, sa*P and SAP. These ‘rather’ peripheral functional projections can be regarded as the extension of the syntax-discourse interface, mirroring the analytical aspect of Mandarin syntax (Huang 2015; Tsai 2015c) in the sense that concepts are not combined into single words, and, instead, they have corresponding positions distributed along the spine of clausal structure from ν P to CP.

4 The Syntax-Discourse Properties of Nonsententials

1. Setting the stage

In Chapter 3, I have shown that the discourse properties of AT are determined in the numeration by merging lexical items with strong informational-structural features and these lexical items have to undergo a feature-checking process in corresponding functional projections (crucially TopP and FocP) in the left periphery of CP and ν P. This account substantiates [Aboh's \(2010\)](#) view that the syntax-discourse interface can start with the numeration. In the following two chapters, I will address the second issue- nonsententials (NSs) in Mandarin- also with the goal of contributing to the line of research pursued in this dissertation. Along the line of Aboh's view, a conclusive generalization from Chapter 4 and 5 is that not all discourse properties have to be determined in the numeration. The interface properties of NSs indicate that certain discourse properties, such as the notions of SPEAKER and HEARER/ADDRESSEE, are external to the numeration and have to be clausally substantiated by a layer of speech act functional projections that constitute a SPEAKER-ADDRESSEE domain in the topmost position of the CP periphery. The domain is responsible for the encoding of the SPEAKER/ADDRESSEE's point of view with respect to the utterance content (ForceP).

Lacking a full clausal structure, a Mandarin NP NS in (1)a is interpreted as having a complete propositional content: the speaker intends to cut in line by uttering (1)a. In addition, the NS has a clause type and is endowed with an illocutionary force, directing the hearer to make way for the speaker so that s/he can cut in line. This NS is also

accompanied by two particles; the discourse particle *eh*², though optional, is to draw the hearer's attention (Hsu 2016), and the sentence-final particle (henceforth abbreviated as SFP) *ah* is to convey the speaker's impatience. It is further observed that the NS-final position is occupied by the second person pronoun *ni*, resembling a vocative phrase. However, the presence of *ni* is closely tied to the presence of the utterance-final particle; if the SFP *ah* is absent, the second person pronoun cannot occur. (1)b represents the linear sequence of constituents included in this NP NS, showing that such NS is surrounded by 'a set of satellites'. Under the cartographic approach to the left periphery (Rizzi 1997; Cinque 1999), the above empirical observations suggest that the NS may consist of several functional projections in the left periphery, ForceP for clause typing and SFPs (Pan 2015; Pan and Paul 2016a, Pan and Paul 2016 b; Paul 2014, among many others), sa*P/SAP for the vocative and discourse particles (Moro 2003; Hill 2007; Haegeman and Hill 2013; Haegeman 2014). The first question to ask is the amount of hidden structures involved in the clausal composition of NSs such that they exhibit various left peripheral effects.

(1) NS NP in Mandarin

- a. Context: A bully intends to cut in line and yells at a person in front of him...

Eh², wo xian * (ah), (ni)!

D.PART I first SFP you

'Eh, me first, you!'

[Clause type: Declarative; Speech act: Directive]

- b. Discourse Particle-[Utterance]_{NS}-SFP- *-you*

Second, it is observed that the syntactic structure of the NS in (1)a has a reduced structure. It is tempting to postulate that PF deletion is motivated to operate on it. This amounts to suggesting that the NS has a fully-fledged underlying clausal structure. Nevertheless, the lack of a salient linguistic antecedent in the discourse suggests that PF deletion cannot be motivated because there is no way for the deleted material to be recovered from the linguistic antecedent. The second question is how NSs are derived at syntax if there is no fully-fledged structure as well as the linguistic antecedent guiding PF deletion. Third, as noted in previous studies, NSs are highly discourse-sensitive in the sense that they are only felicitous in their own context where the speaker and the hearer are involved. From the perspective of syntacticians, it is interesting to ask how such discourse

properties are syntactically represented.

This chapter is organized as follows. In addition to differentiating between fragment answers (FAs) and nonsententials (NSs) on empirical grounds, in Section 2, I review theoretical issues surrounding NSs and underscore their discourse properties that cannot be accounted for by pure syntactic approaches. In Section 3, I will distinguish fake NSs from two types of genuine NSs in Mandarin and illustrate their syntactic properties that signal a layer of hidden functional projections in the clausal structure of CP. In Section 4, diagnostic evidence is provided for the fine structure of NSs. I will in Section 5 review five approaches to the derivation of NSs from various perspectives, *X^{max} Generalization* (Barton 1990, 1998), *Extension of X^{max} Generalization* (Barton and Progovac 2005), *Simple Syntax Hypothesis* (Culicover and Jackendoff 2005), the phase-based analysis (Fortin 2007), the clause-based view (Valmala 2007) and the base generation view (De Cat 2013). It is concluded that these attempts cannot offer a unified analysis of Mandarin NSs. Section 6 concludes this chapter with generalizations that will be accounted for in Chapter 5.

2. The story and problem

The nature of fragment answers (FA) has been of great interest to syntacticians because how they are derived from a structure smaller than a full clausal structure has been vigorously debated in the previous scholarship. For concreteness, (2)B is generally known as ‘a fragment answer’(FA) or ‘a nonsentential’ (NS).⁸⁹ As one’s intuition can tell, the complete propositional content of (2)B can be syntactically represented in (2)B’. This amounts to explaining the guiding intuition why the FA can be interpreted as having a proposition, as it is derived from a fully-fledged clausal structure.

(2) The question-fragment answer pair in English

A: What do you eat?

B: Apples.

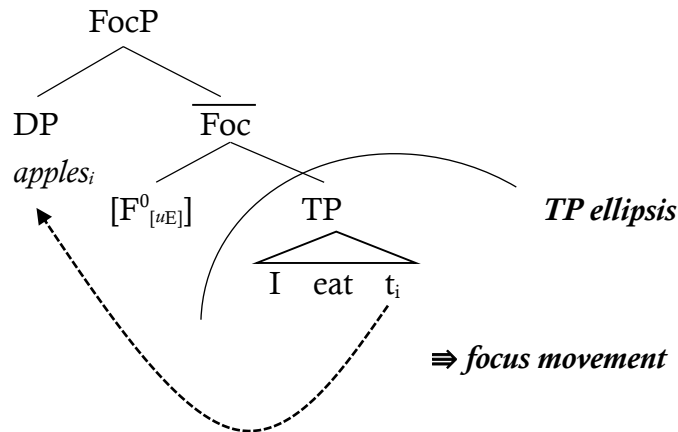
B’: I eat apples.

Merchant (2001, 2004, 2006 subsequent work) proposes an inspiring ellipsis analysis, and argues that (2)B is derived by (\bar{A} -)focus movement, followed by TP ellipsis, as

⁸⁹ The structural distinction between them will be made in the following discussion.

visualized in (3), where the DP *apples* undergoes focus movement to [Spec, FocP] before TP ellipsis applies at PF. The [E] feature instructs PF not to parse its complement and not to pronounce it. This provides a straightforward account of what we hear is not within the scope of the [E] feature, namely the DP *apples*.

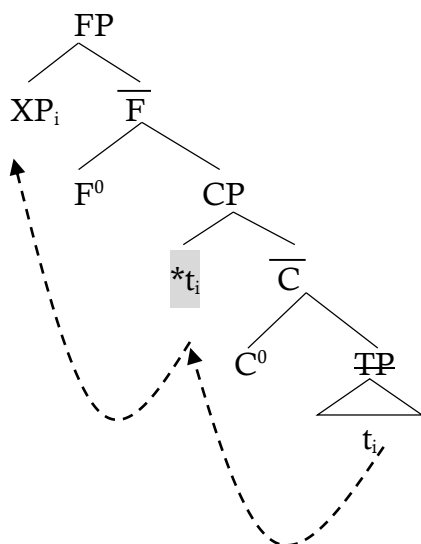
(3) Merchant's (2001) focus-based analysis of (2)B



Nevertheless, this movement-cum-ellipsis analysis, though promising and tempting as it looks, is problematic in several regards (See [Stainton 2006](#) for a severe critique) and cannot account for a wider range of FAs and NSs in a unified way.

First, as noted in [De Cat \(2013\)](#), Merchant's analysis predicts that FAs/NSs cannot occur out of the blue, because deletion targets a constituent that bears given/old information and whose syntactic structure is identical to that in the antecedent clause. This entertains a possibility of having two versions of FAs/NSs, one with a full clausal structure that is not subject to movement and deletion, and the other that already undergoes movement and deletion. Nevertheless, this prediction is not born out, as evident in (b) examples in (4) to (6). The ungrammatical (b) examples from (4) to (6) are not accounted for, if the movement-cum-deletion analysis (3) is implemented. The (b) examples consistently point out that FAs in (a) examples from (4) to (6) do not have a full clausal source, because movement of the FAs apparently violates various types of island conditions. [Merchant \(2004\)](#) ascribes the ungrammaticality to the absence of island repairs; in other words, there is an extended projection XP between FocP and TP, and it is not deleted, making the PF-uninterpretable trace stay at [Spec, XP], as instantiated in (7).

- (4) The violation of the Left Branching Condition
- a. Speaker A: Whose sake has she been drinking?
 Speaker B: Her mother's.
- b. Speaker B: * [Her mother's]_i, she has been drink [**t_i sake**].
- (5) The violation of the complex NP constraint
- a. Speaker A: Yasu met a child who speaks Urdu.
 Speaker B: With a Japanese accent?
- b. Speaker B: *[With a Japanese accent]_i, Yasu met a child [**who speaks Urdu**
t_i.]
- (6) The violation of the coordinate structure condition
- a. Speaker A: Haruko has been drinking sake all weekends.
 Speaker B: Yes. And Shochu.
- b. Speaker B: * [And Shochu]_i. [**Haruko t_i**] has been drinking sake all weekends.
- (7) The absence of island repairs occurs because the trace at [Spec, CP] remains at PF and is not deleted.



For the sake of clearing up terminological unclarities in using *FAs* and *NSs*, I suggest that there is a structural distinction between these two structures, as illustrated in (8)B and

(9)B respectively, though both the FA in (8) and the bare NP in (9) are able to receive complete propositional content. (8)B can be analyzed as having a full clausal source, as self-evident in (8)B', while (9)B lacks this defining property and is only felicitous in its proper context. As pointed out in [Barton \(1998\)](#), any NS taking bare forms like (9)B fails to be recovered by any possible means; that is, there is no identical linguistic context, no defining situation context and no special grammatical rule available for the recoverability of the propositional content. This chapter focuses on NS examples like (9)B.

(8) English fragment answer

A: What stops the White House Staff from visiting Ted Kennedy in his Senate office?

B: An old grudge.

B': An old grudge stops the White House Staff from visiting Ted Kennedy in his Senate office?

(Modified from [Barton 1998](#), p.43, ex. 5a)

(9) English nonsentential

A: The White House staff doesn't visit Ted Kennedy in his Senate office.

B: Old grudge.

([Barton 1998](#), p.43, ex. 5b)

A question, as *WYSIWYG* (*what you see is what you get*) linguists might raise, is whether such distinction has so much to bear on the grammar. The response is YES. It is moved in [Merchant \(2006\)](#) that though an ellipsis-based analysis is appropriate for a wide range of FA data (in English, Greek and other languages), based on case matching, preposition stranding, binding relations, connectivity, pronominal restrictions, scope, bound variable anaphora, etc., (See [Merchant 2004](#)), there is a plethora of phenomena preferring 'a direct interpretation approach'. In other words, NSs are licensed by the discourse context in the absence of explicit linguistic sources serving as an antecedent. A couple of illustrative examples excerpted from Merchant (2006, p. 84, ex. 63a-f) are represented in (10). Merchant argues that these NSs seem to some extent to be conventionalized, and exhibit the omission of the VP [*do it*], for example, *shall we* [_{VP} do it] in (10)c, *she won't* [_{VP} do it] in (10)e, *Don't* [_{VP} do it] in (10)f. The meaning of the VP is licensed by the discourse relevance

of some action. Specifically, Merchant tends to suggest that in (10) there are still words/phrases embedded somewhere and deleted at PF. In addition, some NSs in (10) do not involve extraction (no movement and ellipsis), as evident in (11).

(10) Examples of NSs

- a. [Miss Clairo advertisement:]
Does she or doesn't she? Only her hairdresser knows.
- b. [As a response to an offer of a second piece of chocolate cake:]
I really shouldn't.
- c. [As an invitation to dance:]
Shall we?
- d. [Seeing someone about to do a shot of Jenever:]
If you can, I can, too.
- e. [Looking at someone about to jump off a bridge:]
She won't.
- f. [Seeing someone about to light his head on fire:]
Don't!

(11) NSs that do not involve extraction

- a. *The tango, shall we? (compared with (10)c)
- b. *The bridge, she won't. (compared with (10)e)

(Merchant 2006, p. 85, ex. 67b-c)

Despite there being a lack of firm evidence for ellipsis, Merchant suggests that 'ellipsis' seems to operate in a high context-dependent way. For example, in a restaurant context, one might utter (12)a. However, though being a legitimate NS, it bears the case marker that is also found in the full imperative clause (12)b. In light of the context-dependency, Merchant claims that 'a limited ellipsis' analysis of NSs seems feasible.

(12) Russian

- a. **Vody** (pozhalujsta!)
water-GEN please
'(Some) water (please)'

- b. Dajte mne **vody** (pozhalujsta!)
 give-IMP me water-GEN please
 ‘Give me (some) water (please)’ (Merchant 2006, p. 87, ex. 70)

Still, an urgent question is how FAs and NSs, if there is a distinction between them, are generated with respect to the grammar. Merchant (2006) claims that when a linguistic antecedent is available, the grammar resorts to it, motivating an ellipsis analysis; by contrast, when no linguistic antecedent is not accessible but the context is salient enough to provide an interpretative import for NSs, a direct interpretation analysis is forced, though Merchant himself is dubious about the direct interpretation analysis (Merchant 2006: 89).

Though FAs can be successfully accounted for by Merchant’s ellipsis analysis (a tactical success in Stainton’s (2006) sense), the analysis is conceptually and empirically problematic in several aspects, as severely critiqued by Stainton (2006).⁹⁰ The first problem is the distribution of the [E] feature. As discussed above, Merchant attempts to extend his ellipsis analysis to NSs, which do not have any salient linguistic antecedent. Under the ellipsis analysis, it is predicted that NSs can have sentential counterparts. To Merchant, the NS NP *several men from Segovia* has a sentential counterpart $[_{TP}[_{NP} \textit{Several men from Segovia}][E][_{VP} \textit{do it}]]$, where $[_{VP} \textit{do it}]$ is the posited elliptical site. Then, the examples from (13) to (16) apparently counterexemplify the postulation of the elliptical site. To Merchant and proponents of the ellipsis analysis, (13) and (14) can be explained by postulating that what is embedded is the NP rather than the VP. Then, this explanation is immediately challenged by the grammatical sentences in (15) and (16), where the embedded phrases are VPs.

- (13) *If there is graffiti on the wall, then several men form Segovia.
 (14) *If several men from Segovia, then the job will be poorly done.
 (15) If there is graffiti on the wall, then several men from Segovia $[_{VP} \textit{do it}]$.
 (16) If several men from Segovia $[_{VP} \textit{do it}]$, then the job will be poorly done.

⁹⁰ Stainton (2006: 104-112) presents several convincing arguments against Merchant’s ellipsis analysis and postulation that NSs implicitly involve deletion. Nevertheless, a thorough overview of all the counterarguments calls for a large space for discussion. I will briefly review a couple of core counterarguments, which suffice to prove that the ellipsis analysis needs to be further examined.

The second problem pertains to focus movement. Merchant's analysis claims that focus movement takes place before TP ellipsis applies. Stainton points out that, from a crosslinguistic perspective, focus movement of certain kind of expressions is forbidden.⁹¹ Recall from that connectivity evidence Merchant offers shows that the FA bears accusative if it is the object argument in its corresponding ellipsis site, and it bears nominative, if it is the subject argument. Consider the Malagasy data in (17) and (18). In (17), the FA *Radoa* is marked for accusative in this context; by contrast, in (18), the FA can bear either nominative or accusative, though the two contexts are pretty similar. Stainton suggests that in Malagasy, words and phrases might have no elliptical site, when the speaker intends to perform a speech act. Another piece of evidence against Merchant's focus movement is that non-subject fronting is banned, as can be seen in (19)b.

(17) Malagasy

Q: Manaja an'iza Rabe?
 respect ACC.who Rabe
 'Who does Rabe respect?'

A: i. An-Rasoa.
 ACC-dRasoa
 'Rasoa'
 ii. *Rasoa
 Rasoa(-NOM)
 'Rasoa'

(Stainton 2006, p. 106, ex. 21)

(18) Malagasy

Q: Iza no hajain-deRabe?
 Who FOC respect(-PASSIVE)-Rabe
 'Who is respected by Rabe?'

A: i. Rosoa
 Raso(-NOM)
 'Raso'

⁹¹ For another instance, De Cat (2013) points out that focus fronting of the *wh*-phrase in French is disallowed, which, in turn, rejects the movement-cum-ellipsis analysis.

ii. An-deRasoa

ACC-Rasoa

'Rasoa'

(Stainton 2006, p. 106-107, ex. 22)

(19) Malagasy

a. Subject fronting

Rabe no manaja an-dRasoa.

Rabe FOC respect ACC-Rasoa

b. Nonsubject fronting

*An-dRasoa no manaja Rabe.

acc-Rasoa FOC respect Rabe

'Rasoa, Rabe respects.'

(qtd in Stainton 2006, p.107, ex. 23)

As noted in Stainton (2006: 107), Merchant's personal response suggests that the above facts can be accounted for by resorting to repair effects, evidenced by the fact that the ellipsis version of a sentence is more grammatical than the corresponding sentence that does not involve ellipsis.⁹² Stainton criticizes Merchant's response by saying:

(20) "...one cannot apply to them [repair effects] whenever an ellipsis account seems to make the wrong predictions- at the risk of making 'repair effects' a get-out-of-counterexample-free card. What is needed to really mount a rebuttal to these sorts of cases, then, is a positive reason for thinking that these fall under the constrained set of such 'escape hatches'- not just the mere existence of such a class." (Stainton 2006: 107)

The above discussion has shown that there is a tug war between movement and base generation with respect to the derivation of NSs. The central generalization is that if a constituent can have a full clausal source, then it is regarded as a FA, and otherwise, a NS.

⁹² The examples are provided as follows.

- (i) *They want to hire someone who speaks a Balkan language, but I don't remember which they want to hire someone who speaks.
- (ii) They want to hire someone who speaks a Balkan language, but I don't remember which [~~they want to hire someone who speaks~~].

(Stainton 2006, p. 107, ex. 24-25)

Nevertheless, there is an interface property that differentiates NSs from FAs. NSs are inherently endowed with illocutionary force and used to perform speech acts. As a French NS shows in (21), [De Cat \(2013\)](#) indicates that such NS must be interpreted as performing the speech act, exclamative; otherwise, its felicity is not met in the context.

(21) Exclamative NS in French

Toi, dans ta chambre!
you in your bedroom
'Go to your bed room!'

([De Cat 2013](#), p. 130, ex.20)

The inherent endowment of speech acts/illocutionary force in NSs is not surprising; instead, careful examination of [Merchant's \(2006\)](#) NS data, as demonstrated in (22) and (23), which he resorts to a direct interpretation analysis of, indicates that these NSs have to be interpreted as performing speech acts. (22) represents a directive speech act that asks the hearer to do something, and (23) expresses the speaker's expressive speech act about the current situation, under [Searle's \(1976\)](#) taxonomy of speech acts.

(22) [Short directive:]

Left! Higher! Scalpel!

([Merchant 2006](#), p.87, ex.81)

(23) [Expressive exclamations:]

Wonderful! Nonsense! Fate! For Pete's sake.

([Merchant 2006](#), p.87, ex.81)

To sum up, it has been demonstrated in this section that there are structural differences between FAs and NSs. FAs involve movement and deletion, primarily analyzed under [Merchant's \(2006\)](#) movement-cum-deletion mechanism, while NSs resist such analysis as there is a lack of proof in support of their recoverability that bears on salient linguistic sources. What's more, it has been shown that NSs are able to be used to express speech acts in the particular context. As will be demonstrated in Section 3, Mandarin NSs are also context-sensitive and can be used by the speaker to convey his/her communicative goal in the context. In addition, Mandarin NSs can be surrounded by a constellation of 'satellites' that are considered C-elements in the CP layer under the cartographic approach.

3. Mandarin nonsententials

This section is organized as follows. In Section 3.1, I offer evidence showing that there is no genuine VP and PP NSs in Mandarin because of language-specific properties of Mandarin. In Section 3.2, I demonstrate two types of genuine NSs in Mandarin. Section 3.3 concludes this section with a summary of the properties of Mandarin NSs, and point out that these properties provide insight into the hidden structure of Mandarin NSs.

3.1 Surface nonsententials in Mandarin

English allows diverse types of NSs, as illustrated in (24)a-f. [Fortin \(2007\)](#) mentions that NSs, like those in (24)a-f smaller than a sentence or a proposition, have tended to be accounted for by postulating that they are simply derivative of that according to a sentence or a proposition. From a derivational perspective, syntacticians are intrigued by the question as to whether syntactic representations of NSs are sentential.

(24) Types of NSs in English

a. NP Nonsentential

Speaker A: What's wrong with you today?

Speaker B: (I have a) headache.

b. PP Nonsentential

Speaker A: When are you going home?

Speaker B: (I'm going home) after class.

c. VP Nonsentential

Speaker A: What are you going to do with those old books?

Speaker B: (I am going to) sell *(them).

d. AP Nonsentential

Speaker A: What color is the book?

Speaker B: (The book) is green.

e. QP Nonsentential

Speaker A: Who was at the party?

Speaker B: Everyone (was at the party).

f. AdvP Nonsentential

Speaker A: Are you able to give me a ride home today?

Speaker B: (I am) certainly (able to give you a ride home today.)

(Modified from Fortin 2007, p. 68, ex. 1-6)

The diverse types of NSs in English are not clearly defined in Mandarin, however. Precisely, I argue that there are only two genuine types of NSs in Mandarin, NP NSs and AdvP NSs, and this is because of certain complications that make it hard to identify VP and PP NSs in Mandarin.

To begin with, it has been accepted that Mandarin is a pro-drop language (Huang 1984) in the sense that nominal arguments are able to remain covert. Consider a PP NSs in (25). At first glance, the PP *zai Taibe* does not rely on any linguistic antecedent for its recoverability of the propositional content. Nevertheless, Speaker B's utterance actually represents an instance of pro-drop, as shown in (26), where the subject *wo* 'I' remains covert. Another empirical complication is that no copular is needed for the subject to be connected to PPs in Mandarin.

- (25) Speaker A: Ni xiaoshi hao jiu yo!
 you disappear very long SFP
 'You have disappeared for a long time.'
- Speaker B: oh, [zai Taibe], *(ah), ni
 DIS.P in Taipei SFP you
Intended ⇒ 'Oh, I have been living in Taipei, you.'

- (26) The underlying clause of (25)b
 Oh, (wo)[zai Taibe], *(ah), ni.
 DIS.P I in Taipei SFP you
 'Oh, I am in Taipei, you.'

In addition, (27)a is an hypothetical instance of VP NSs. Notice that the second person pronoun *ni* in the NS-final position cannot be the subject of the VP NS, as evident in (27)b, where *ni* is not a right-dislocated argument because it cannot be reconstructed in the subject position. However, (28) proves that (27)a can be also analyzed as instantiating

pro-drop, in which the NP *zhejianshi* ‘this matter’ is covert or in the form of *pro*.

(27) Context: Mother sees the living room in a mess when back from the market, and turns to her son. The son utters...

a. [Bu gan wode shi]_{NS} * (ou) ni.
 NEG related my business SFP you

Intended ⇒ ‘(It is) none of my business.’

b. *Ni [bu gan wode shi]_{NS} * (ou)
 you NEG related my business SFP

(28) (Zhe-jian-shi) [bu gan wode shi]_{NS} * (ou) ni.
 this-CL-matter NEG related my business SFP you

‘You, this matter has nothing to do with me.’

The core generalization from two instances indicates that they have clausal structures, and their ‘incomplete’ structures result from the pro-drop parameter. In addition, if a NS allows the occurrence of the subject, either overt or covert, this can be interpreted as saying that the NS involves a clausal structure. Following [Barton and Progovac’s \(2006\)](#) proposed analysis of English NSs (See Section 5.2), the presence of the subject entails TP structure in the NS. In this view, it follows that the VP NS and the PP NS in (27)a and (25) respectively involve full clausal structures. What’s more, the presence of the negation *bu* in (28) shows that the VP NS does not only involve ‘VP’ but also NegP, whose designated position is above *v*P (See [Ting 2006](#)). [Liu et al. \(2001\)](#) consider NSs in Mandarin to be *predicate-less*, and [De Cat \(2013\)](#) calls NSs in French *verbless phrases*. I conclude that genuine NSs do not involve argument structure.⁹³

⁹³ Another distinctive property of NSs is that they lack overt linguistic antecedents, which serve as clausal sources subject to deletion, in the discourse. In this light, (i.) can be regarded as a NS, if its full propositional content has to be recovered from the discourse. By contrast, if one treats (i.) as being derived from (ii.a) or (ii.b.) via deletion, (i.) is not a NS but a fragment answer because its full proposition of (i.) is dependent on its clausal source in (ii.a), (ii.b.) or (ii.c.), as has been discussed in Section 2 of this chapter.

- (i.) SHEME GUI LA, NI!
 what ghost SFP you
 ‘What, you!’ (Chung-Yu Barry Yang, p.c.)
- (ii.) Possible clausal sources of (i.)
- a. NI XIUAN SHEME GUI LA, NI!
 you like what ghost SFP you
 ‘You like what, you!’ (⇒ You should not like it, you!)

In a nutshell, confronted with the above-mentioned complications, I argue that genuine NSs do not project argument structure. That is, NPs and AdvP/AdjP NSs do not constituent-select any nominal argument, and it follows the pro-drop complication can be circumvented. In Section 3.2, I will introduce NPs and AdvP/AdjP NSs, and point out that they still have propositional content, though lacking clausal sources.

3.2 Two types of nonsententials in Mandarin

To motivate the discussion in this section, I take the minimal assumptions as follows. First, I adopt Searle's (1976) taxonomy of five basic illocutions with five categories, as summarized in (29).

(29) Searle's taxonomy of illocutions

- a. Assertive: to commit the hearer to something being the case.
- b. Directives: to make the addressee perform an action.
- c. Commissive: to commit the speaker to doing something in the future.
- d. Expressive: to express how the speaker feels about the situation.
- e. Declarative: to change the state of the world in an immediate way.

Second, a NS can represent a clause type itself. I adopt Cheng's *Clausal Typing Hypothesis* (1997) in (30), and the gist of the hypothesis for the analysis of NSs is that the clause type of a NS is determined by a functional projection in the left periphery, which can be a ForceP in Mandarin (Paul 2014).

(30) Clausal Typing Hypothesis

Every clause needs to be typed. In the case of typing a *wh*-question, either a *wh* particle in C⁰ is used or else fronting of a *wh*-word to the Spec of C⁰ is used, thereby typing a clause through C⁰ by Spec-head agreement. (Cheng 1997:22)

-
- b. Ni zai jiang sheme gui la ni!
 you PROGtalk what ghost
 'You are talking about what, you!' (⇒ You should not talk about it, you!)
- c. Ni zai kan sheme gui la, ni!
 you PROGlook what ghostSFP you
 'You are looking at what, you!' (⇒ You should not look at it, you!)

Third, as discussed in Section 2, NSs are not derived from fully-fledged clausal structures that are subject to PF-deletion. In this light, there is no overt linguistic antecedent salient for recoverability of the deleted material. Moreover, NSs are uttered in a discourse context where the speaker utters NSs that encode his/her attitude, intension, and so on, in order to achieve communicative goals toward the addressee. I will provide contexts for NSs to ensure that NSs are felicitously uttered.

3.2.1 NP Nonsententials

(31) shows that the NS can be a NP itself, typed into a declarative and endowed with the assertive force. It is interesting to note that the NS can be accompanied by the SFP *ne*, which is used to make the NS relevant to the current context, and the hearer can be syntactically represented by the second person pronoun *ni* ‘you’, though its presence is optional.

(31) Context: After climbing the mountain for 5 minutes, Speaker A, aged 20, is out of breath. Speaker B says to Speaker A...

[Lao-ren]_{NS} * (ne), ni.
 old-man SFP you
 ‘Old man, you.’

[Clause Type: Declarative; Speech Act: Assertive]

By contrast, in (32), the NS is a pronoun, accompanied by the SFP *a*, which is employed to reduce forcefulness of the utterance, and the second person pronoun *ni*. Similarly, the pronoun NS can be typed into a declarative and is endowed with the directive one. The directive force says that the speaker wants the hearer to leave.

(32) Context: A bully intends to cut in line while yelling at another person...

[Wo]_{NS} * (a), ni
 I SFP you
 ‘Me, you!’

Intended ⇒ ‘You get out of my way!’

[Clause Type: Declarative; Speech Act: Directive]

The NS in (33) is a proper name and can be analyzed on a par with (31) and (32). The SFP *ba* is used to express the speaker's uncertainty about the identity of the hearer, and the discourse particle *eh²* signals the beginning of an utterance. The directive force here is to direct the hearer to confirm his identity, while the speaker is uncertain. Furthermore, NSs can be quantifier phrases (QP), as evident in (34), where the speaker's intension encoded in this QP NS is to direct the employee to send the notes to everyone in the company. It is apparent that the QP NS encodes a direct force, and the SFP *ou* encodes the speaker's warning attitude.

(33) Context: Picking up the phone call, Lisi hears nothing but a hissing sound, and utters...

Eh², [Zhangsan]_{NS}, *(ba), ni?
D.PART Zhangsan SFP you
'Zhangsan, you?'

[Clause Type: Interrogative; Speech Act: Directive]

(34) Context: An employee replies to her manager that he already sent the meeting notes to some employees. And the manger utters...

Eh, [mei-ge ren]_{NS}, *(ou), ni!
D.PART every-CL person SFP you
'Everyone, you!'

Intended ⇒ 'You should send the notes to everyone in the company.'

[Clause Type: Declarative; Speech Act: Directive]

This section has shown that NP NSs can be pronouns, common nouns, proper names and QPs, and they are derived from neither deletion nor movement, because there is no antecedent clause for them to recover their linguistic source. Besides, they are endowed with clause types and particular illocutionary forces specific to their contexts.

3.2.2 AdjP/AdvP Nonsententials

In addition to NP NSs, it is interesting to note that even AdjP/AdvP can be clausally typed and are endowed with the illocutionary force, as illustrated in (35)a-b. Take (35)b for example. The AdjP NS is an exclamative with which the speaker expresses his surprise about the fact that John hit the jackpot. One distinct property of AdjP/AdvP type is that they are usually exclamatives and perform the expressive speech act.

(35) AdjP/AdvP Nonsententials

- a. Context: Mother knows that his son won the race contest, and utters...

[Zheme bang]_{NS} * (ya), ni!
 so great SFP you
 'How great (it is), you!'

[Clause Type: Exclamative; Speech Act: Expressive]

- b. Context: Hearing that Zhangsan lost the game by one point in a singing contest, Lisi utters...

[Wuyuan]_{NS} * (ah), ni!
 no.luck SFP you
 'No luck, you'

Intended ⇒ '(You) don't have that luck (to win the contest), you.'

[Claus Type: Exclamative; Speech Act: Expressive]

Also, (35)a-b cannot be analyzed as instances of right dislocation. As evident in (36), if the second person pronoun undergoes hypothetical reconstruction, all the underlying structures are equally ungrammatical.⁹⁴ This can be taken to show that the second person pronoun is not part of the structure of NSs. Furthermore, adverbs and adjectives are adjuncts, and it follows that they do not select any nominal argument.

⁹⁴ Admittedly, (35)a has another reading, as in (i.), which can be regarded as the underlying structure of (35)a. I treat this reading as being derived from right dislocation of the subject *ni*. In this light, *ni* is not a vocative, and the transformation between (i.) and (35)a, if accepted, shows that (35)a is not NS. However, the reading in (35)a shows that it is a NS, because its precise clausal structure source is not recoverable and it does not have a salient linguistic antecedent. It is worth pointing out that this line of reasoning fails to apply to (35)b.

(i.) Ni [zheme bang]_{NS} ya!
 you so great SFP
 'You are so great!'

(36) The hypothetical underlying structures of (35)a-b

- a. Ni [zheme bang]_{NS} ya!
 you so great SFP
 * 'You, how great it is!'
- b. *Ni [wuyuan]_{NS} ah!
 you no.luck SFP

3.3 Summary

The two types of Mandarin NSs share five common properties. First, NSs are context-sensitive in the way that they can be felicitously uttered in a specific context. That is, the speaker addresses the hearer directly by uttering NSs with his/her intension encoded as speech acts. Second, given the necessity of the context in licensing NSs, the second person pronoun is employed to syntactically realize the hearer in the immediate context, if SFPs are present. Third, it is observed that NSs are naturally accompanied by SFPs, and the absence of them renders NSs less acceptable. Fourth, in addition to the NS-final SFPs, NSs can be preceded by discourse particles. Fifth, NSs are compatible with all clausal types and can be used to perform different speech acts, if proper contextual conditions are met.

Take an AdvP NS in (37) for example. Notice that the NS can be preceded by the discourse particle *eh²*, which is intended to attract the hearer's attention, rather than followed by it. In addition, the NS can be followed by a SFP *ou*. The presence of discourse particles and SFPs is subject to ordering restrictions; that is, the discourse particle *eh²* cannot occur in the position between the NS and the second person pronoun *ni*. Furthermore, the occurrence of the second person singular *ni* hinges upon the occurrence of the SFP *ou*. As shown in (37), the absence of the SFP makes this AdvP NS ungrammatical.⁹⁵

(37) Adv NS

Context: The teacher talks to her student after attending his presentation...

Eh², [henjingcai]_{NS} (*eh²)/*(ou), ni!
 D.PART very impressive D.PART/SFP you

⁹⁵ This generalization holds true for NSs with the vocative *ni*.

(⇒The speaker initiates the conversation by attracting the hearer’s attention)

[Clause Type: Declarative; Speech Act: Expressive]

Different from English NSs, Mandarin NSs can be surrounded by a constellation of ‘satellites’, as schematized in (38), but a pressing question is what these satellites are. As will become clear, these ‘satellites are orbiting in the CP periphery’ under a cartographic approach.

(38) The schematization of Mandarin NSs

Discourse Particle-[NS]-SFP-*ni*

Moro (2003) defines a vocative phrase as a noun phrase not belonging to the thematic grid of the verb and as being used to attract someone’s attention, as shown in (39).

(39) The vocative phrase in Italian

O Gianni, Maria sta abbracciando Pietro!

o Gianni Maria is hugging Peter!

(Moro 2003, p. 253, ex. 2a)

Moro points out that vocative phrases in Italian are compatible with various clause types (FinP), Clitic Left Dislocation constructions (TopP) and focus construction (FocP) and the relative operator at [Spec, ForceP]. This compatibility can be taken to show that vocative phrases, if regarded as Voc(ative)P which is merged to the leftmost position above these functional projections in the left periphery, are hosted at [Spec, VocP], as illustrated in (40).

(40) The position of VocP in the CP periphery

$C^0 = \dots Voc^0 > Force^0 > (Top^0 > Foc^0 > Top^0 >) Fin^0$

Moro’s analysis, if implemented in the analysis of NSs, suggests that an NS involves the merge of VocP to its left periphery, though its size is as smaller as that of NPs and AdjPs/AdvPs. In addition, it is observed that the vocative phrase in NSs is compatible with various clause types, suggesting that the vocative phrase does not impose any selectional restriction on a particular clause type. In this light, NSs obviously minimally

contain VocP, though covert. The absence of selectional restriction is also pointed out in [Portner \(2005\)](#) that vocatives may occur with all clause types, and need not correspond to an argument in the clause. This line of thought is supported by Mandarin NSs demonstrated above, where NSs are compatible with all clause types.

What's more, NSs can be accompanied by a set of SFPs. Since [Rizzi's \(1997\)](#) split-CP hypothesis, a number of authors have proposed that Mandarin SFPs are analyzed as the heads of multiple functional projections in the articulated left periphery. For example, [Paul \(2014\)](#) argues that SFPs in Mandarin correspond to a more articulated C-domain, as illustrated below.

(41) The classification of Mandarin SFPS ([Paul 2014](#))

| C₁ (low C) | > | C₂ (force) | > | C₃(attitude) |
|---------------------------------------|---|--|---|------------------------------------|
| <i>le</i> currently relevant state | | <i>ma</i> interrogative | | <i>ou</i> warning |
| <i>laize</i> recent past | | <i>ba</i> imperative | | <i>(y)a</i> astonishment |
| <i>ne₁</i> continued state | | <i>ne₂</i> follow-up question | | <i>ne₃</i> exaggeration |

Though her classification of SFPs is not exhaustive enough to cover all the SFPs witnessed in the above NS data, it suffices to show that an NS minimally consists of SFPs and VocP, both of which are C-elements and responsible for the encoding of clause typing information and the illocutionary force.

Summarizing, if the vocative phrase is treated as an indicator of a C-element ([Moro \(2003\)](#) for a functional projection above C⁰, [Portner \(2005\)](#) for *addrP* above IP and [Hill \(2007\)](#) for SAP above CP) and SFPs are the left-peripheral material, it follows that NSs are minimally composed of certain C-elements. In Section 4, I will provide diagnostic evidence to pin down the minimal structure that NSs involve.

4. The peripheral structures of NSs

It has been argued in previous studies that NSs are root clauses. As discussed in [De Cat \(2012\)](#), root clauses are speech acts, which implies the involvement of the speaker (by default the person uttering the sentence). Such involvement permits the speaker to express his emotive reaction concerning what is being said. Root phenomena with a performative import have the extra requirement that root clauses should express a strong involvement of the speaker: to mark the speaker's point of view.

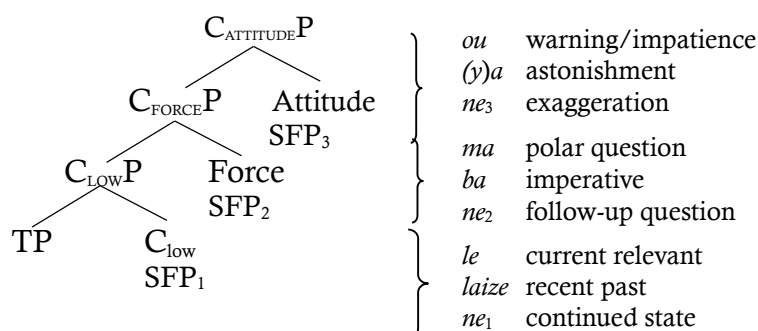
Haegeman (2002, 2006) claims that root properties are dependent on the presence of a dedicated functional projection in the CP layer. In the case of Mandarin NSs, it is tempting to assume that the satellites orbiting around NSs are C-elements in the sense that their occurrence is restricted to the CP layer. Following the line of reasoning here, De Cat (2013) suggests that NSs, though structurally deficient, embody root properties (speech acts and the speaker’s point of view), which amounts to saying that NSs can be analyzed as having an articulated left periphery.

In this section, I will offer diagnostic evidence showing that these satellites surrounding NSs, particularly SFPs and the second person singular *ni*, are C-elements in the CP layer.

4.1 Sentence-final particles in the CP Layer

As briefly mentioned in Section 3.3, Paul (2014) proposes that Mandarin SFPs are head-final heads, and can be divided into three classes, each of which corresponds to a distinct head in the split-CP system (Rizzi 1997), as visualized in (42).⁹⁶ SFP₂ is identified as Force, above which there is another subset of SFP, labelled ‘Attitude’, encoding the speaker’s attitude. The proposal captures the strict ordering of SFP₁<SFP₂<SFP₃ and the complementary distributions of SFPs of the same class in Mandarin.

(42) The proposed hierarchy of SFPs (Paul 2014)



It is observed in Section 3 that NSs can co-occur with SFPs for some unknown, and an interesting question is whether each subset of SFPs is compatible with NSs. As illustrated in (43)a-c, NP NSs are compatible with SFP₃ and SFP₂ in different contexts. Nevertheless, when accompanied by SFPs, NSs are context-sensitive. Take (43)a for

⁹⁶ Erlewine (2017), however, holds a different view on the designated position of C_{low}P, and proposes that the low SFPs are realized by a dedicated head in the extended projection of VP, as the phase head of the lower phase of the clause.

(44) AdjP/AdvP Nonsententials with SFP₃, SFP₂, and SFP₁

a. Context: Mother knew that his son won the race contest, and utters to his son...

[Zheme bang]_{NS} (ou/a/ne₃/*ma/*ba/*ne₂/ *le/*laize/*ne₁), ni!
 so great SFP₃ SFP₂ SFP₁ you

‘How great (it is), you!/.’

b. Context: Zhangsan shoots a three pointer, Lisi shouts...

[Piaoliang]_{NS} (*ou/a/ne₃/*ma/*ba/*ne₂/*le/*laize/*ne₁), ni!
 beautiful SFP₃ SFP₂ SFP₁ you

‘Impressive, you!/.’

Interpreted in Paul’s system, the co-occurrence of SFPs with NSs can be taken to show that only SFP₃ and SFP₂ are closely associated with the syntactic structure of NSs. This association, however, needs to be refined in a way that they represent two distinct functional layers, one for the encoding of the speaker’s attitude and the other for the encoding of clause type. As mentioned previously, each NS can be clausally typed and can be used by the speaker to perform a speech act. Nevertheless, under the assumption that each NS has a clause type, it is hard to explain why the NS (44)a is not accompanied by a clause-typing particle in the sense of C_{FORCE}P, though it can be interpreted as an exclamative endowed with the expressive force. What’s more, as summarized in (45), the alert reader might notice that NSs cannot be the imperative, which is consistent with the observation that the SFP₂ *ba* is not compatible with Mandarin NSs.

(45) Clause types and illocutionary force of NSs

| English Sentence | Mandarin NS | Clause Type | Illocutionary Force |
|----------------------------------|-------------|---------------|---------------------|
| <i>Mary rode a bike</i> | Ex. (31) | Declarative | Assertive |
| <i>Eat the pizza</i> | ----- | Imperative | Directive |
| <i>What does Mary do?</i> | Ex. (33) | Interrogative | Directive |
| <i>How beautiful this flower</i> | Ex. (44)a-b | Exclamative | Expressive |

Moreover, it is observed that the presence of the NS-final second person *ni* hinges upon the presence of SFPs, precisely SFP₃ and SFP₂. First, notice that the second person pronoun *ni* cannot occur if there is no SFP₃ and SFP₂, as evident in (46)a-b. Let’s assume

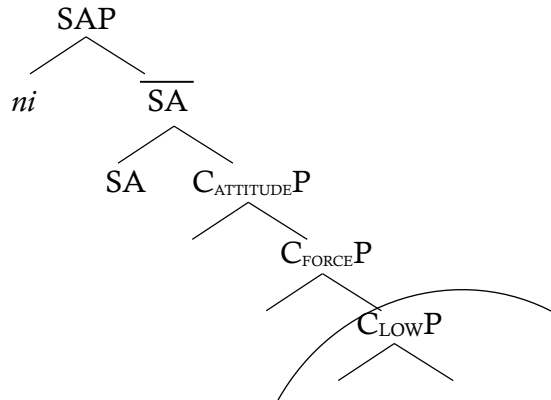
for the time being that *ni* is a vocative phrase at [Spec, SAP] (Hill 2007)⁹⁷, and SAP dominates ForceP, as illustrated in (47). As discussed above, only SFP₃ and SFP₂ are compatible with NSs, suggesting that the structure of NSs involve C_{ATTITUDE}P and C_{FORCE}P. C_{LOW}P has a distinct status different from that of the others. Pan and Paul (2016) point out that finiteness is rather controversial in Mandarin, and C_{LOW}P is a neutral label to replace FiniteP. SFPs under C_{LOW}P are used to close off the sentence, related to tense of sentences.

(46) NP NS

Context: Zhangsan promises to give his girlfriend a birthday present. When they meet, his girlfriend notices that he does not bring anything and utters...

- a. [Liwu]_{NS} ne₃/ne₂, ni?
 present SFP₃/SFP₂ you
 ‘Present, you?’
- b. #[Liwu]_{NS}, ni?
 present you

(47) SAP hypothesis (Hill 2007)



Three questions that remain to be answered are summarized below.

- Are NSs compatible with SFP₃ (C_{ATTITUDE}P), SFP₂ (C_{FORCE}P) or both?
- Why are NSs not compatible with SFP₁ (C_{LOW}P)?
- Why can NS not be the imperative?

The first question can be discussed from two perspectives. First, as shown in Section

⁹⁷ I will return to the details of this analysis in Chapter 5.

3, if an NS can be used to perform a speech act, it is clausally typed. Interpreted in Paul's system of SFPs, this is not surprising because the presence of SFP₃ (C_{ATTITUDE}P) entails the merge of SFP₂ (C_{FORCE}P) in the left periphery. This line of reasoning predicts that if an NS is only accompanied by a SFP₂, it does not necessarily encode any attitude. This prediction is born out in (48), where no speaker attitude is encoded. *Ne*₂ is used to initiate the follow-up question from the hearer.

(48) Context: A girl is knitting gloves and turns to her mother...

Eh², [Zheyang], ne₂, Mami?
 DIS.P this way SFP mother
 'This way, Mother?'

[Clause Type: Interrogative; Speech Act: Directive]

Besides, a line of demarcation between SFP₃ and SFP₂ is not always clear-cut. To be precise, though it is a traditional view that Force⁰ (=SFP₂ in Paul's system) is claimed to be a locus of clausal typing information, there remain several cases where single SFPs are able to denote a clause type and encode the speaker's attitude at the same time, as evident in (49) and (50).

(49) The SFP *a* (a clause typer + the speaker's attitude/evaluation)

Ni yiding hui zheme zuo a.
 yousurely will this.way do SFP

'It is the asserted case that you will do it this way, (against the commitment to my belief).'

(50) The SFP *ba* (a clause typer + the speaker's attitude/evaluation)

Zhangsan mai-le bushao dongxi ba.
 Zhangsan buy-ASP many thing SFP

'It might be the case that Zhangsan bought so many things.'

Paul (2014) also indicates that SFP₃ can be fused with SFP₂, as exemplified in (51). In this light, it might be hard to differentiate between SFP₂ and SFP₃ in a single particle in terms of clause typing information and the speaker attitude.

- (51) The SFP₃ is fused with the SFP₂
 Kuai zou b'ou [=ba+ou].
 fast go SFP FORCE+ATT
 'Hurry up and go!'

(Paul 2014, p.93, ex.32)

Second, the puzzle why NSs are not compatible with SFP₁ needs to be explained. I suggest that there are two alternative explanations. The first explanation comes from Erlewine's (2017) reexamination of SFP₁ in Mandarin, and argues that SFP₁ is an extended functional projection in the ν P periphery. It follows that NSs, surrounded by C-elements, cannot be compatible with a set of ν P-level elements. However, there are several empirical and theoretical kinks to be solved with his proposal. As thoroughly discussed by Liao (2017), many of Erlewine's arguments for the proposed analysis cannot be sustained on both empirical and theoretical grounds. The second explanation is that SFP₁ has to do with the substantiation of clausal properties. As pointed out by Pan and Paul (2016), C_{LOW}P is a neutral label to replace FiniteP, as the precise syntactic representation of finiteness in Mandarin still remains controversial. Assume that C_{LOW}P is an alternative to FiniteP, and its presence pertains to a set of clausal properties, including the TAM (tense, aspect, mood) system, Case and subject licensing (See Adger (2007) for a comprehensive survey of finiteness issues, Grano (2017) and Sybesma (2017) for finiteness in Mandarin). It follows that NSs cannot be compatible with the SFPs under FiniteP because NSs are devoid of overt clausal structure that is able to substantiate these clausal properties assumed to be encoded by FiniteP.

The last question is that NSs cannot be the imperative. I suggest that this gap can be ascribed to the fact that genuine NSs lack argument structure, and do not c-select any argument. It is known that the imperative has to involve an imperative subject, though covert, and this subject has to be c-selected by argument structure of a verb. Take (52) for example. The imperative subject *ni* 'you' in (52)a and *women* 'we' in (52)b, though covert, have to be the agent of the argument structure of the verbs. Nevertheless, as discussed in Section 3.1, genuine NSs do not involve argument structure, and it is accounted for that NSs are not compatible with the SFP₂ *ba*.

(52) Imperative clauses

- a. (Ni) gun ba!
 you go SFP₂
 ‘You get out of here!’
- b. (Women)zou ba!
 we go SFP₂
 ‘Let’s go!’

In this section, I have shown that NSs are compatible with SFP₃ and SFP₂ under Paul’s system of SFPs in Mandarin, and the incompatibility with SFP₁ is closely related to the lack of clausal properties of NSs or the postulated position of SFP₁ in the *v*P periphery.

4.2 The utterance-final *ni* as a vocative phrase⁹⁸

The previous section has shown that Mandarin NSs minimally consist of ForceP in the split-CP domain, accounting for the fact that they can be typed and able to encode the speaker’s attitude. This line of argumentation, however, does not suffice to explain why NSs impose a strict restriction on the presence of the second person pronoun *ni* ‘you’ in the utterance-final position. From Section 3, it has been observed that Mandarin NSs can be optionally accompanied by the second person pronoun *ni* ‘you’ in the utterance-final position, prosodically marked. A further question is the designated position of *ni* and its discourse function in Mandarin NSs. Note that the second person pronoun *ni* in NSs has to be deitic; that is, it is co-referential with the hearer/addressee in the immediate context. In what follows, though Mandarin does not have vocative case markers or particles, I will provide evidence showing that *ni* is a vocative phrase. As will become clear in Chapter 5, I argue that Mandarin NSs are analyzed as involving SAP merged above ForceP, advanced in several previous studies ([Haegeman 2014](#) for West Flemish, [Choi 2016](#) for Korean, among others).

There are three core properties of vocatives. First, in vocatives, addresses may be direct by identifying the interlocutor (e.g. *John, I can’t do it*), or indirect when the

⁹⁸ In Chapter 5, I will further show that the vocative phrase *ni* can also occur in the pre-NS position but is naturally preceded by discourse particles.

interlocutor is not identifiable (i.e. *Oh, my god, what am I going to do!*) (Hill 2007). Second, vocative DPs are outside the thematic grid of the verb but related to propositional information (Moro 2003). Syntactically, vocatives behave as adjuncts adjoined to a host clause, and occupy a clause-external position. Third, as noted in Portner (2005), vocatives do not impose selectional restrictions on clause types; that is, a vocative phrase can be compatible with all clause types.

Let's now examine whether *ni* in Mandarin NSs can be analyzed as a vocative (or the HEARER role). First, NSs are context-sensitive and are used by the speaker to address the addressee/hearer in the immediate context. This property is related to the discourse function of vocatives that identifies the hearer(s)/addressee(s). Thus, in (53), the vocative must be the second person pronoun rather other pronouns. This restriction is not far from mysterious because NSs are used by the speaker to address the addressee/hearer in the immediate context.

(53) NP NSs

Context: Zhangsan promises to give his girlfriend a Christmas gift tonight. Upon seeing Zhangsan not carrying any stuff, his girlfriend utters...

[Liwu]_{NS} ne, ni/*ta/*tamen/*ta?
 gift SFP₂ you/he/they/it
 'Gift, you/*he/*they*it?'

Second, vocatives do not play a thematic role of the verb in the main clause. Consider the NP NS in (54), where the speaker signals that Lisi should run away because there is a fire taking place. (54)b shows that *ni* 'you' cannot be the thematic subject of the clause. Different from vocatives in other languages where they usually appear in the left-peripheral position of the clause (See Moro 2003 for Italian; Hill 2007 for Romanian; Espinal 2013 for Catalan), vocatives in Mandarin NSs often appear in a sentence-final position, as shown in (54)a. Even if the pronoun *ni* 'you' in (54)c is in the topic position, marked by the optional topic particle *ha*, the sentence is still ungrammatical.

(54) NP NS

Context: The fire on Lisi's house takes place, and Zhangsan utters when seeing Lisi...

- a. [huozai]_{NS} ya, ni!
fire SFP₃ you
'Fire, you!'
- b. *Ni huozai ya ni!
you fire SFP₃ you
- c. *Ni ah, huozai ya!
you TOP fire SFP₃

In addition, there are two pieces of evidence in support of the view that *ni* is not related to the thematic structure of a verb in the host clause. First, it is apparent in (55) that the NP *zuoye* 'assignment' does not have a thematic structure. Neither can the second person pronoun *ni* be the subject of the sentence. Second, (56) has two readings; one reading is that winning the gold medal is a great thing, and the other reading is that the son's performance is great. The former (56)a confirms the fact that *ni* cannot be the subject of the sentence. It follows that the optional presence of *ni* indicates that it does not have a thematic relation to the host clause.

(55) NP NS

Context: All students are required to submit their homework assignments but Zhangsan forgets to bring his to the class. The teacher notices this and utters...

- [Zuoye]_{NS} ne, ni?
assignment SFP₂ you
'Assignment, you?'

(56) AdjP NS

Context: Mother sees her son win a gold medal in a race context, and utters ...

- [Zheme bang]_{NS} ya, ni!
this great SFP₃ you
- a. 'How great (winning the gold medal is), you!'
- b. 'You are so great!'

The second reading in (56)b indicates that *ni* might be a case of right dislocation, whose underlying structure is represented in (57), where *ni* can be analyzed as the subject of the sentence, and undergoes right dislocation to the rightmost position of the sentence in (56). (58) is another instance of AdjP NS where *ni* is not the thematic subject of the sentence. What's more, if (58)a is a case of right dislocation of *ni* from the sentence-initial position, it remains not clear why the underlying structure version of (58)a in (58)b.i. is ruled out by the context. The salient reading in (58)b is that you have an ugly-looking appearance, incompatible with the context.

(57) The right dislocation analysis of (56)b

| | | | | |
|-----|-------|-------|----|-----|
| [Ni | zheme | bang] | NS | ya! |
| you | this | great | | SFP |

'You are so great!'

(58) AdjP NS

Context: Zhangsan is found cheating on his girlfriend and having an affair with another women. When meeting Zhangsan, his friend, Lisi, utters...

- a. [Nankan]_{NS} ya, ni!
 despicable SFP₃ you
 '(Your behavior is) Despicable, you.'
- b. Ni nakan ya!
 you despicable SFP
- i. *'You, (your behavior is) despicable.'
 ii. 'You are ugly.'

Third, vocatives in NSs are compatible with all clause types, the observations being made in Section 3, which can be interpreted as saying that *ni* is a vocative and does not impose selectional restrictions on clauses it merges to. The lack of clause type selection of *ni* in Mandarin NSs is confirmed by vocatives in other languages.

The above diagnostic tests have confirmed the vocative status of *ni* in Mandarin NSs, and it appears in the rightmost position. And its presence, though optional, is able to explain the fact that Mandarin NSs are used to address the addressee/hearer salient in the context.

4.3 Summary

In this section, I have shown that those satellites surrounding NSs are C-elements in the sense that they occur in the CP periphery, and each of them occupies an independent functional projection and contributes different information-structural import to the interpretation of NSs. Nonetheless, we need to explain how these C-element substantiate the licensing condition of NSs whose structure is reduced on the surface, and how NSs are derived.

5. Previous approaches

In this section, I review five major approaches to the derivation of NSs. As the alert reader might notice toward the end of this section, they consistently argue for a base generation or direct interpretation approach. Nonetheless, I will show that none of them can be motivated to account for the discourse properties of Mandarin NSs, which apparently concretize a layer of CP-level functional projections involved in the syntactic structure of NSs.

5.1 X^{\max} Generalization (Barton 1990, 1998)

Grounded in the aspect of X-bar theory, Barton (1990, 1998) proposes that the initial node of a generative grammar is not confined to S but is X^{\max} .

(59) The X^{\max} Generalization

The initial node of a generative grammar is X^{\max} .

(Barton 1990, p. 195; 1998, p. 42, ex. 4)

Barton suggests that although (59) contradicts with the assumption that the initial node of a generative grammar is S, it allows not only generating sentences with the initial node of S but also generating nonsentential constituents with initials nodes of VP, PP, NP, AdjP, AdvP, and S'. Compared with the ellipsis analysis (Morgan 1973; Merchant 2001, 2004), where all FAs/NSs must have full-fledged clausal counterparts, an X^{\max} analysis predicts that NSs can take on various forms. Barton contends that the X^{\max} analysis is

supported on empirical and theoretical grounds. First, it allows base-generation of NSs, not only accounting for independent phrases within a related discourse context but also explaining the fact that NSs are not related in syntactic forms to their surrounding utterances. Second, the X^{\max} analysis respects the autonomy of grammar and restricts the grammar to the derivation of single structure in accordance with the context. Third, under this analysis, the interpretation of NSs is shifted to the context of discourse rather than the semantic component of grammar (LF in the MP, for example). Last, the X^{\max} analysis does not eliminate the ellipsis analysis from a generative grammar, though ellipsis is limited to intransiential deletions, such as gapping.

Two specific deletion rules are proposed in (60); (60)a is intended for NSs with evidence for missing subjects, as can be seen in (61), while (60)b deals with NSs with missing functional categories in (62).

(60) Deletion rules under X^{\max} Generalizations

a. Generalized Ellipsis Rule 1

Optionally delete subjects up to recoverability. (Barton 1998, p.49, ex. 15)

b. Generalized Ellipsis Rule 2

Optionally delete functional categories up to recoverability.

(Barton 1998, p. 50, ex. 16)

(61) a. All ill.

b. Am at border in Newbury, Vermont.

(Barton and Progovac 2005, p. 72, ex. 4a.-b.)

(62) a. Get lawyer.

b. Card dead.

c. Problem arisen.

(Barton and Progovac 2005, p. 73, ex. 6a.-b.)

Viewed in the MP, the two ellipsis rules, however, are confronted with certain theoretical problems, as indicated by Barton and Progovac (2005:73). First, the need for motivating the rules remains suspicious. Second, the ellipsis rule (60)a targets the subject rather than the object, establishing the subject-object asymmetry. The puzzle why this asymmetry arises is unmotivated. Third, since the subject is arguably a functional category in a sentential projection, say [Spec, TP], it is apparent that the rule (60)b is able to subsume the rule (60)a. Fourth, it is found that not every functional category is deleted,

such as *to*-infinitives, and *if/whether*, lodging an obvious objection to the rule (60)b. Lastly, how the rules are treated within the current framework of generative grammar or the MP calls for an answer. With the advance of minimalism (Chomsky 1995), Barton and Progovac (2005) attempt to reexamine the X^{\max} Generalization by resorting to the consideration of economy, which will be reviewed in the following subsection.

5.2 Extension of X^{\max} Generalization (Barton and Progovac 2005)

Barton and Progovac (2005) argue that analyzing NSs as phrases and small clauses is the most economical derivation for such structures in the spirit of the MP (Chomsky 1995), as merge is a cost-free operation. Adopting this insight, Progovac (2006) argues that the minimalist view can be elaborated in a more specific way with respect to NSs; namely, the derivation of NSs bears directly on the absence of the T^0 node and the default case. NSs result from selecting lexical items with unspecified/default forms of Tense and Case, that is, no TP. In other words, the TP layer is regarded as a cutoff point between what is perceived as a NS and what is perceived as a full clause. Theoretically speaking, Progovac (2006) argues that there is nothing in minimalism that precludes base-generation of structures smaller than TP. The derivation of each sentence/phrase proceeds in a bottom-up fashion and the last node for whose projection there is linguistic evidence. Recall that direct evidence for the last node is to see which phrase there is as linguistic evidence for. In addition, there is a marked boundary between a XP and a sentence according to X' -theory, given that a sentence can be treated as a phrase whose head is T^0 . This can be taken to show that there is nothing in the X' -theory that would privilege the projection of TP. At least in English, Progovac observes that the effects of the absence of T^0 are readily captured.

Now, consider two sets of data below. In (63)a, it is shown that NPs in the NS form do not bear a determiner (D^0) when the copular is absent, whereas in (63)d, when the copular *is* is present, the NS without a determiner or an article is ungrammatical. Furthermore, in (64)c, when there is no copular serving the bearer of tense, the nominative subject does not survive, whereas in (64)d, the accusative subject is incompatible with the presence of the copular. These correlations are far from a coincidence.

- (63) a. Batter dead./Problem solved.
b. The battery is dead./The problem is solved.

- c. *The battery dead./*The problem solved.
- d. ?*Battery is dead./?*Problem is solved.

(Progovac 2006, p.38, ex. 29)

- (64)
- a. Me first!/Him worry?
 - b. I am first./He worries.
 - c. ?*I first./??He worry.
 - d. *Me is/am first./*Him is worries.

(Progovac 2006, p.38, ex. 30)

To account for the above facts, Progovac maintains that all NS facts are related to Tense and Case. The gist of her analysis that each NS is a syntactic object that lacks formal features to be checked off, which, in turn, says that there is no motivation to project any additional (functional) projection. Adopting the phrasal small clause structure analysis, Progovac analyzes NSs as having small clauses, as illustrated in (65). Words of explanation are as follows. First, suppose that T^0 is the locus of the nominative feature⁹⁹, which can be checked by DP. Nevertheless, in (65), T^0 is not projected as TP, and it follows that the pronoun has to bear the default accusative. In addition, the verb *worry* is without Tense and Case features, which is the reason why it does not have a relationship with T^0 . This nicely captures the bare form of verbs in the case of VP NSs. (66) is an instance of passive. The verb in the participial is merged with the NP *problem* directly. If there is no D^0 projected as DP above NP, the NP *problem* must in the bare form. Following Longobardi's (1994) analysis that Case is assigned to DP rather than NP and DP is the argument, NP (the bare form) is not an argument and does not need any structural case accordingly.

⁹⁹ A more recent view has argued that C^0 is the locus of Case/Agree system. For example, Carstens (2003) lends support to this view by observing the fact that the preposed object DP prevents C^0 from agreeing with the subject DP, as shown in (i.). Carstens claims that the preposed object *oons* 'us' is a defective intervener, and it cannot agree with C^0 for Case because its Case has been deleted in the strong vP phrase. As this issue is not directly related to the discussion here, I will leave this issue aside for expository reason.

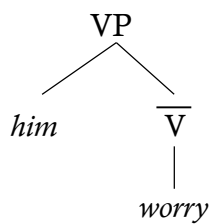
(i.) **Hellendoorn**

| | | | | | | |
|----|--------|--------------|------|-------|-----|-----------|
| Ik | deenke | dat/*datte | oons | zolfs | Jan | nie mag. |
| I | think | that/that-PL | us | even | Jan | not likes |

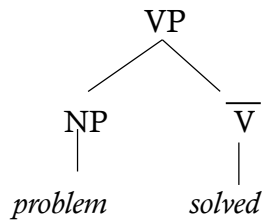
'I don't think even Jan likes us (lit. I think that us, even Jan doesn't like).'

(qtd. in Carstens 2003, p. 399, ex. 12)

(65) VP NS in English



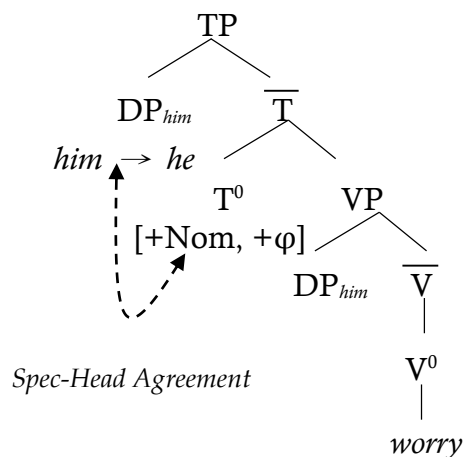
(66) Passive VP NS in English



This analysis predicts that if T^0 is projected as TP, it follows the DP *him* undergoes obligatory movement to [Spec, TP] to check the nominative feature and the verb *worry* agrees with T^0 for the ϕ -features (Number in particular), as visualized in (67)b. This explains the illegitimate presence of *him* in the subject position in (67)a. The line of reasoning pursued here elucidates the fact in (68) that *doctor* cannot appear in a bare form when in the subject position. Assume that D^0 is the locus of Case, and *doctor* has to further project D^0 as DP in order to enter a Spec-Head Agreement for Case checking, similar to the example in (67)b.

(67) The derivation of a sentential clause

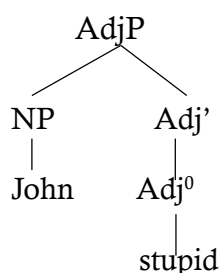
- a. He/him worries.
- b. The derivation of (67)b.



- (68) a. *(The) doctor locked the office.
 b. She/*her ate the dinner.

The mechanism motivated above nicely captures the absence of clausal properties and the bareness of NP NSs in a rather unified way. Three properties of the mechanism are summarized as follows. First, Barton and Progovac claim that in English, the pronoun from the lexicon bears the accusative feature, which can be taken to be the default Case or no Case, because a need for the postulation of two Cases features in the Lexicon creates redundancies and it is not usual for one phonological form to correspond to multiple lexical items (*he* vs. *him*). Feature-checking mechanisms at narrow syntax serve a way to determine the appropriate form of the pronoun or the NP, with the presence of T^0 and D^0 . Second, a small clause analysis of VP NSs is grounded in current syntactic theory. For example, the Adjective NS, *John stupid* in (69), can be taken by the Exceptive Case Marking (ECM) verb *consider*, as shown in (70).¹⁰⁰ Third, as can be seen in (67)b, a marked difference between sentences and NSs lies in the merge of functional projections (such as TP and DP), whose formal features have to be checked in the derivation. If there is no functional projection merged to lexical projections, these lexical projections are what are we call NSs.

(69) The small clause analysis of adjectives in English



(70) I consider [_{AdjP} John [_{Adj⁰} stupid]]

It is apparent that Barton and Progovac's *Extension of X^{max} Generalization's* is built on a correlation between Case and the presence of determiners, and does not account for the discourse properties that NSs are context-sensitive and are endowed with an illocutionary

¹⁰⁰ For other variants of the small clause of VP NSs and PP NSs, the reader is referred to Progovac (2006, p. 52, ex. 82-87).

force, as noted in (De Cat 2013). We will turn to the detailed discussion on this analysis in Section 5.6.

5.3 Simple Syntax Hypothesis (Culicover and Jackendoff 2005)¹⁰¹

Following *Simple Syntax Hypothesis* (SSH) in (71), Culicover and Jackendoff (2005) argue that NSs are understood as embedded in propositions, yet they constitute the entire syntactic structure of the utterance.

(71) Simple Syntax Hypothesis (SSH)

The most explanatory syntactic theory is one that imputes the minimum structure necessary to mediate phonology and meaning.

Specifically, NSs are arguably the orphan phrases integrated into a propositional structure. There are two processes of such integration: (a.) identifying a proposition P in which the orphan plays a role; (b.) identifying the exact role that the orphan plays in P. In NSs, P is a proposition that is pragmatically related to the antecedent sentence/or the nonlinguistic context in some appropriate way.

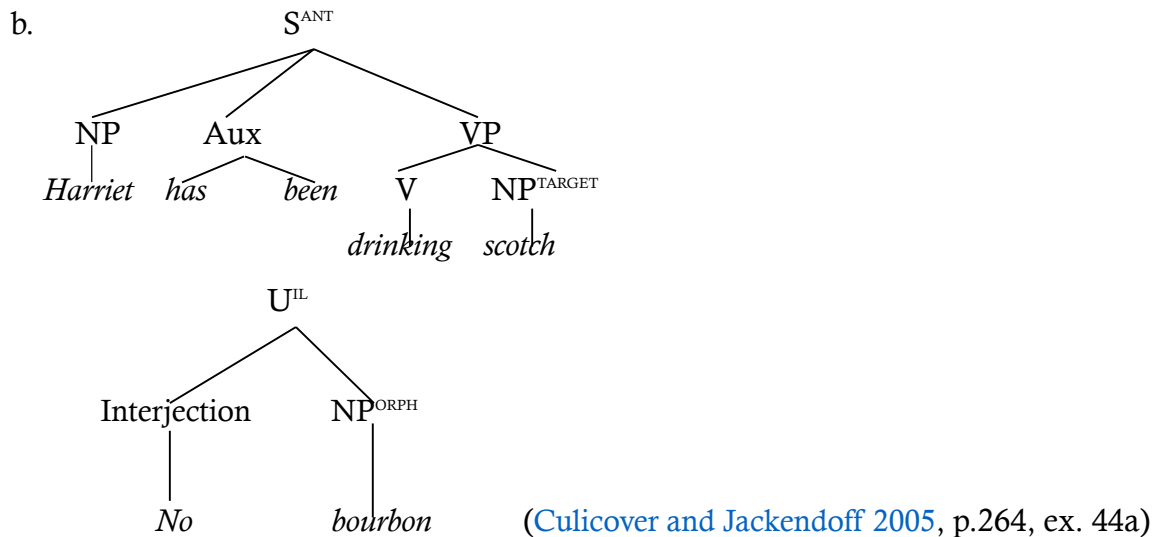
There are two possibilities of generating NSs, which crosscut the indirectly licensed (IL)-constructions. The first possibility is matching. As shown in (72), the NS *bourbon*, labeled as NP^{ORPHAN}, matches *scotch*, the NP^{TARGET}, in the antecedent sentence (S^{ANT}). Thus, the licensing condition is satisfied.

(72) Matching

- a. Harriet been drinking scotch- No, bourbon.

(Culicover and Jackendoff 2005, p. 257)

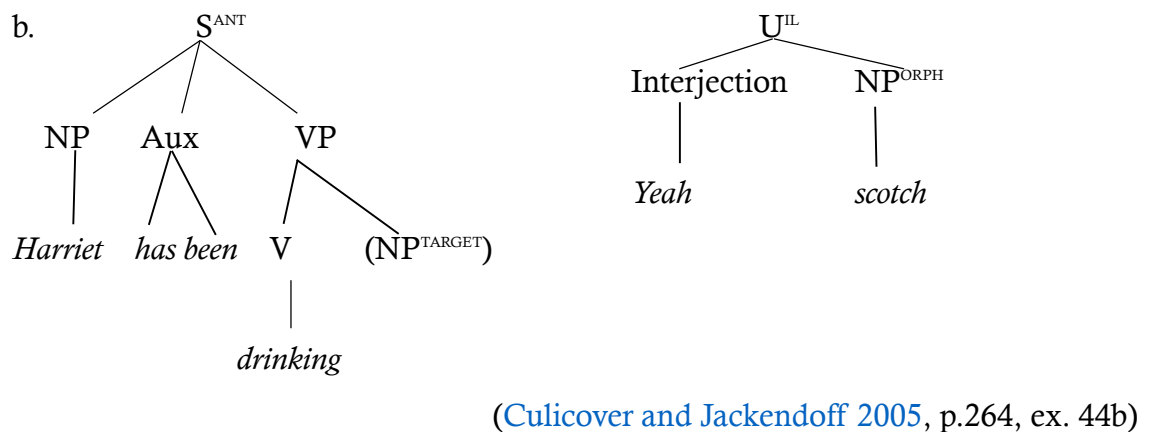
¹⁰¹ I am indebted to Wei-wen Roger Liao for pointing out to me this important framework, which I might be ignorant of, otherwise.



The second possibility is sprouting, which has two sub-types. In the case of (73)a, there is an implicit NP^{TARGET} of the verb *drink* marked in the lexicon, and this implicit NP is fleshed out by the NP^{ORPH}. The licensing condition on the NS *scotch* is activated by a part of the Lexicon in the antecedent sentence.

(73) Sprouting I

- a. Harriet's been drinking- Yeah, scotch. [implicit argument]
 (Culicover and Jackendoff 2005, p. 257)



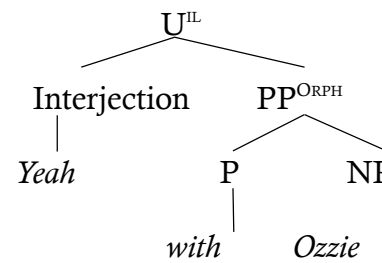
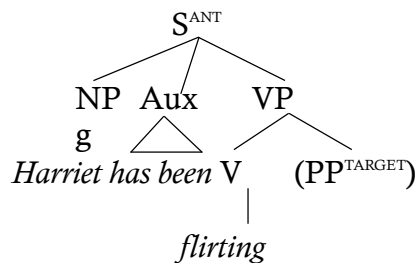
The other type of sprouting is provided in (74). There is a PP position marked as TARGET in the antecedent clause (74)b, and this PP position can be directly filled by the PP *with Ozzie* in the NS. The licensing condition is that a syntactic connection proper to the PP^{ORPH}'s semantic role in the antecedent clause has to be established.

(74) Sprouting II

a. Harriet's been flirting- Yeah, with Ozzie. [added adjunct]

(Culicover and Jackendoff 2005, p. 257)

b.



(Culicover and Jackendoff 2005, p.264, ex. 44c)

Tempting as the SSH might seem, there are several empirical and theoretical kicks to be worked out. First, the SSH, similar to the X^{MAX} Generalization, cannot account for the presence of SFPs and the vocative in Mandarin NSs, which are C-elements under the cartographic approach. Second, this hypothesis is confronted with the burden of proof.

5.4 The phasal nonsententials (Fortin 2007)

Fortin (2007) argues that there are two types of subsentential XPs in English- One type involves base generation, whereas the other is derived from ellipsis on a large structure. The former can be analyzed as NSs in our sense, while the other is fragments. Fortin maintains that certain NSs (subsentential objects in her sense) converge on their own without being embedded in large structures; they are Spell-Out and evaluated by the interface directly because they do not contain unvalued features that will cause a given derivation to crash if they remain uninterpretable at the interface. Under Fortin's analysis, NSs that converge upon Spell Out include adjunct adverbials, prepositional phrases and noun phrases that do not have structural case, bare unergative verb phrases and interjection phrases. In marked contrast, constituents, like inflected verb phrases and noun/determiner phrases morphologically marked for case, do not converge themselves when evaluated by the interface. (75) is a summary of her proposal.

(75) The summary of Fortin's (2007) proposal

The underlying representation of some nonsententials is fully clausal, and the nonsentential is the result of an ellipsis operation. However, there are other nonsententials that are not the result of an ellipsis operation, because they themselves are convergent syntactic objects.

As added by Fortin, the merit of this proposal is that it does not introduce any extra stipulation in the sense that the independently motivated derivation model adopted here is able to predict that certain kinds of NS strings result from ellipsis, whereas other kinds are the convergent subsentential XPs. Take adjunct adverbials for example. Fortin points out that they do not contain any additional structure, because they do not bear any uninterpretable features that need to be checked. Take the contrast between (76) and (77) for example. The NS (77)c does not converge itself. The object DP *the bus* bears an uninterpretable Case feature, which has to be checked by v^0 , and merging the VP *ride the bus* with vP is necessary in order for the NS (77)c to converge. It follows that (77)c cannot be regarded as a genuine NS but a large structure that is reduced via deletion. By contrast, the NS (76)c does not contain a DP, and there is no uninterpretable feature that have to be checked, and the NS itself can be sent to Spell-Out.

(76) The convergent NS

- a. How are you going to get to Nashville?
- b. Drive
- c. [_{VP} drive]

(77) The non-convergent derivation of NS

- a. How are going to get to Nashville?
- b. Ride the bus
- c. [_{VP} ride [_{DP} the bus]]

The analysis advanced above elucidates the point that the unergative verb NS, such as *drive* in (76)c, can be a convergent NS itself because it introduces no internal argument that bears any uninterpretable feature. It predicts that the unaccusative NS in (78)b is degraded because the unaccusative introduce an internal argument, [_{VP} *arrive I*], that surfaces as the

subject. In other words, the internal argument of the unaccusative verb requires the merge of TP whose T⁰ is able to check the unvalued case feature of the argument, and it follows the unaccusative verb itself cannot be a phase sent to Spell-Out directly.

- (78) The unaccusative verb NS
- a. What's happening at noon?
 - b. ?* Arrive at noon.
 - c. [VP arrive [AdvP at noon]]

(Fortin 2007, p.78, ex. 27)

However, I would like to point out two central problems with the implementation of Fortin's analysis. First, it has been the established fact that Mandarin is devoid of rich morphology, and there is no substantial empirical support lending weight to a feature valuation/checking mechanism integrated as a part of Fortin's derivational model. There is no overt reflex of Case and ϕ -features resulting from *Agree*. Second, argument structure cannot be a reliable indicator. Take the unaccusative verb (79)b -c for example. Analyzed on a par with (78), (79)b is predicted to be ruled out because the DP *ren* should surface as the subject (c.f. *die* in English). Interestingly, the unaccusative verb *si* 'die' in Mandarin allows two event structures- Either the internal argument *ren* raises to [Spec, TP] in (79)c¹⁰², or it remains in the VP domain (79)b.

- (79)
- a. Fasheng shema shi le?
happen what matter ASP
'What happened?'
 - b. [Si ren le].
die person ASP

¹⁰² (79)b can be analyzed as involving a νP^{OCCUR} that introduces a locative subject, as shown in (i.), where the subject can be covert. Nevertheless, if this analysis is on the right track, (i.) has a clausal structure, as visualized in (ii.), and cannot be a genuine NS of our concern.

- (i.) (Cunzi-li) si ren le.
village-in die person ASP
'Someone died in the village.'
- (ii.) [TP [PP *cunzi-li*]_i [νP^{OCCUR} t_i [₀ s_j [VP t_j ren]]]]

- ‘Someone dies (somewhere).’
- c. [Ren si le].
 person die ASP
 ‘The person died.’

Although Fortin’s analysis fails to account for the fact that Mandarin NSs can be surrounded by C-elements (illocution, clause typing information, etc.), it is worth noting that her analysis supports the line of research in this dissertation- That is, the syntax-discourse interface property can be determined in the lexicon. Fortin argues for the view that lexical items in a numeration form a convergent NS, though structurally incomplete, the grammar permits this option because it contains no additional unvalued features as well as a set of additional layers of structures that are required to generate a convergent object.

5.5 The syntax of little things (Valmala 2007)

Valmala (2007) proposes that NSs (non-sentential constituents) are pure focus constructions that are built based on numerations containing only lexical items with the feature [+Focus]. The guiding intuition is that NSs in question-answer pairs are the non-presupposed materials relevant for the identification of a variable in the preceding clause. For instance, Valmala points out that focus fronting is restricted to contrastive focus, as evident in (80) and (81). She takes the absence of focus fronting in (80) as counterevidence to Merchant’s sluicing analysis, according to which X endowed with [+Focus] undergoes obligatory focus movement to escape from the TP-elliptical site.

(80) Focus fronting is blocked in English

A: What did Susan eat?

B1: # Spinach she ate.

B2: She ate spinach.

B3: Spinach.

(Valmala 2007, p.6, ex. 16)

(81) Contrastive focus fronting in English

A: Did Susan eat leaks?

B1: No, spinach she ate.

B2: No, spinach.

(Valmala 2007, p.6, ex. 17)

Now, consider a question with different answers in (82). (82)B1 is the only felicitous NS answer to the question.

(82)

A: What will John do to the car?

B1: Total it.

B2: *Total.

B3: #Him/He total it.¹⁰³

B4: #Total the car.

B5: He'll total the car.

Core observations are as follows: The VP NS cannot contain the referential DP *the car* in (82)B4; this VP NS does not have the internal argument *it* in (82)B2, which is the presupposed part and not part of the focus interpretation; The sentential counterpart is provided in (82)B5.

Given the above observations, Valmala proposes that the VP NS starts with the numeration as in (83), triggering only a focal interpretation of the verb and excluding the DP *the car*. Nevertheless, this numeration does not explain the insertion of the overt pronominal *it*. Valmala, adopting Hornstein's (2006) proposal that reflexive and pronouns are not part of the numeration but grammatical formatives appearing in the course of the derivation, argues that the pronoun is inserted in the manner of *Last Resort* in order to check strong features, Case and φ -features, on ν^0 , as visualized in (84). Notice that *pro* is inserted in [Spec, ν P] to satisfy the theta requirement of ν^0 , and this insertion blocks phonological features.

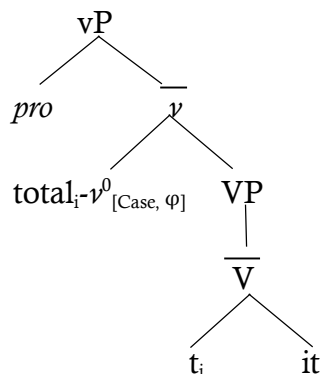
¹⁰³ Valmala points out cross-speaker variation in the choice of Case in contexts where overt nominative and accusative pronominal are accepted, as shown in (i). (82)B3 is inappropriate in the context set up in (82).

- (i) A: What will John and Mary clean?
B1: **Him** clean the carpet and her fix something for dinner.
B2: He clean the carpet and fix something for dinner.

(Valmala 2007, p. 28, ft. 34)

(83) {total[+_{Foc}]}

(84) Valmala's proposed analysis of (82)



Nevertheless, it is apparent that Valmala's analysis fails to readily capture the properties of Mandarin NSs and the absence of genuine VP NSs in Mandarin. Despite the inapplicability, it is worth noting that Valmala adopts a lexicalist view of focus in which focus as a formal feature is inserted in the numeration, in the lines with [Aboh \(2010\)](#).

5.6 Dislocated topics in French nonsententials (De Cat 2013)

[De Cat \(2013\)](#) argues that NSs convey new information (labelled nucleus) and can be followed or preceded by peripheral phrases (labelled the satellite), as exemplified in (85)a-b.

(85) French NSs

- a. [_{NUCLEUS} XP] Satellite
 [_{NUCLEUS} Les_i voilà], les petits copains_i.
 them PRESENTATIVE the little friends
 'Here (are) the little friends.' ([De Cat 2013](#), p.328, ex.13)
- b. Satellite [_{NUCLEUS} XP]
 Et maintenant, [_{NUCLEUS} de la tomate]
 and now PART the tomato
 'And now (let's add) some tomato.' ([De Cat 2013](#), p.328, ex.14)

De Cat points out that these satellites cannot be regarded as elements that undergo dislocation because they are not associated with any position or any resumptive element

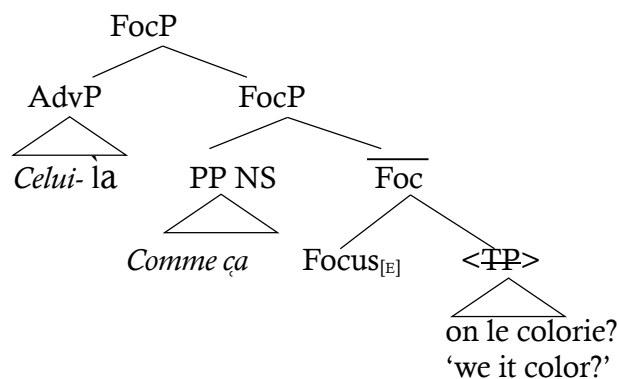
inside a clause. Nevertheless, these satellites share a set of core characteristics similar to genuine dislocated elements; (i.) They receive similar prosody; (ii.) Their presence is optional if their referents are salient in the context; (iii.) They seemingly fulfill the same informational function as dislocated elements: the satellite in (85)a expresses what the utterance is about, whereas that in (85)b restricts the domain within which the predication holds. De Cat proposes that these satellites are better analyzed as A-topics, following [Bianchi and Frascarelli's \(2010\)](#) postulated existence of three types of peripheral topic. Heavily simplified, (86) fits several essential A-topic criteria in the way that the satellite *Celui-là* can occur in interrogatives, convey a request (speech act) and cannot be embedded as it occurs with a NS.

(86) French NSs

| | |
|---|--|
| <p>[_{Satellite} <i>Celui-là</i>], that one-there</p> | <p>[_{NUCLEUS} <i>comme ça</i>? like that</p> |
| <p>‘[Shall we put] that one like this?’</p> | <p>(De Cat 2013, p.129, ex. 18)</p> |

Under a cartographic approach, these properties with their interpretative import suggest that they occupy rather higher positions above FocP in the CP periphery. De Cat raises the question- Can (86) be analyzed as involving a full clause that undergoes sluicing, as visualized in (87), following Merchant's ([2004, 2006](#)) sluicing analysis?

(87) The hypothetical structure of (86)



(87) shows that the nucleus (PP NS) would move to [Spec, FocP] from TP, which would undergo sluicing later, and the satellite (AdvP) is merged higher than FocP and is not affected by the silent Spell-out of F⁰'s complement. If a sluicing analysis like (87) is accepted on general grounds, it fails to account for NSs whose sentential counters are

ungrammatical, as evidenced by (88), where (88)b cannot be a sentential counterpart of (88)a because French does not allow the fronting of *quoi* ‘what’.

(88) The French NS does not have its sentential counterpart

- a. Quoi, le bleu?
what the blue
‘What [is the matter with] the blue one?’
- b. *Quoi (est-ce qu’) il a, le bleu?
what is-it that it has the blue

(De Cat 2013, p.131, ex. 25)

It is shown that satellites in French NSs are devoid of sentential counterparts but have similar interpretative, prosodic and syntactic properties. Thus, a full-clause analysis has to be rejected on empirical grounds. Under the cartographic approach, it is obvious that these satellites would be equivalent to root topics above FocP, whose Spec position is able to host NSs. Confronted with the lack of robust evidence for a sluicing analysis, De Cat concludes that non-clausal structures like NSs, which are endowed with illocutionary force, can substantiate root properties despite not projecting a fully-fledged C-domain.

5.7 Summary

In this section, I have reviewed six competing analyses of NSs. It is obvious that they agree on a base generation approach, but there are some distinguishing differences between them. First, [Barton and Progovac \(2005\)](#) argue for a base generation approach to NSs from an economical perspective- There is no need to merge a layer of superfluous structures that will be subject to deletion over the course of derivation. In marked contrast, [Fortin \(2007\)](#) claims that syntax, as independently motivated, allows NSs to be generated because NSs do not include uninterpretable features in the numeration that require merge of a layer of functional projections to check these uninterpretable features. Fortin’s analysis has advantages over Barton and Progovac’s analysis in a way that NSs are not necessarily regarded as a reflex of ‘economical derivation’, giving rise to construction-specific stipulations, because the grammar permits NSs to be generated. Nonetheless, [Valmala \(2007\)](#) sustains the view that VP NSs are added with the [Focus] feature in the

numeration, and other features, such as Case and φ -features, have to be checked as the derivation unfolds up to the merge of ν P. Second, different from the other analyses, [De Cat's \(2013\)](#) analysis attempts to account for the interpretation (e.g. clause typing information) and function (e.g. illocutionary force) of NSs by looking at the distribution of elements that are allowed to surround NSs. It is concluded that NSs are a manifestation of CP-structure.

Nevertheless, these analyses fail to account for the NS fact in Mandarin- Mandarin NSs can be surrounded by a cluster of C-elements, which are indicators of functional projections in the CP periphery. As Mandarin displays high syntactic analyticity ([Huang 2015](#); [Tsai 2015c](#)), concepts are not combined into single words, and instead they have corresponding positions merged along the spine of clausal structure from ν P to CP. In this view, there is ample reason to believe that these C-elements surrounding NSs can be taken to show that CP peripheral structures are involved as part of the hidden structure of NSs. NSs consisting of CP-level structures are not novel on empirical grounds. Under the cartography approach, the syntax-discourse mapping can be syntactically incarnated by a layer of functional projections in the upper field of the CP periphery. In this view, the functions of NSs (e.g. illocutionary force) and distribution of satellites (e.g. the vocative phrase, discourse particles and SFPs) surrounding NSs already suggest themselves.

From the perspective of language acquisition, NSs play a conspicuous role. On the one hand, [De Cat \(2006\)](#) points out that NSs are root clauses, and all root clauses are endowed with a performative function and that children's truncated structures are performed by being root. Children utter NSs to perform speech acts, as their development of syntax is not yet matured to the extent that fully-fledged clausal structures can be uttered. On the other hand, from a rather parametric perspective, [Rizzi \(2005\)](#) contends that UG defines the clausal structure as a hierarchy of positions, starting from the left periphery. In its maximal expression, the system starts from ForceP, and continues with the positions of the left periphery and with the positions of the IP system. Under the view of the truncation parametrization, Force is the unmarked case always available to function as the root, with other categories (TopP, IP, ...) being admissible operations which some languages may choose. Languages may vary in the amount of truncation permitted in root clauses, attributed to as a matter of parametric choices. In this sense, Mandarin NSs lend much weight to this parametric view in the way that NSs, if regarded as truncated structures of sort, contain C-elements that are specific to root clauses. In Chapter 5, the proposed

analysis will capture these properties in a more principled manner.

6. Conclusion

In this chapter, I have addressed the issues involved in dealing with NSs in the previous scholarship, and confined the empirical scope of Mandarin NSs under discussion. Besides, six previous analyses of NSs are discussed, and it is argued that none of them can be motivated to account for the properties of Mandarin NSs. Before concluding this chapter, there are two questions worth our attention, as discussed by [Ludlow \(2005\)](#) and summarized by [Fortin \(2007\)](#):

- Does the grammar generate NSs?
- Can one perform a ‘genuine speech act’ in which propositional content is communicated?

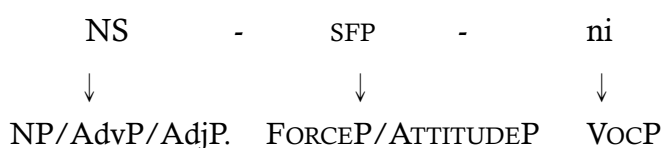
The answer to the first question is rather straightforward- Yes. Fortin argues that NSs are already in the numeration, and can be sent to Spell Out directly without entering narrow syntax. It is for sure that other analyses, like the SSH ([Culicover and Jackendoff 2005](#)) and the X^{MAX} Generalization ([Barton and Progovac 2005](#)), support this view, though from different theoretical perspectives. Nonetheless, the answer to the second question remains open. As added by Fortin, the answer to the second question is outside the domain of syntax. As will become apparent in Chapter 5, I suggest that the proposed analysis is able to answer the second question, and the core generalization is that discourse functions can be syntactically represented, in opposition to Fortin’s view.

5 The sa*P Analysis of Nonsententials

1. Recapitulation

In Chapter 4, we have seen a cluster of the syntax-discourse properties indicating that Mandarin NSs involve an amount of CP-level functional structures, as instantiated in (1). This reaches the conclusion that these satellites are C-elements in the CP periphery; SFPs encode clause typing information and the speaker's attitude in Paul's (2014) system, and the vocative phrase (VocP) is part of the CP structure proposed by Moro (2003). Besides, I have argued that there are two types of genuine NSs in Mandarin, that is NPs and AdvPs/AdjPs.

(1) The structure of Mandarin NSs



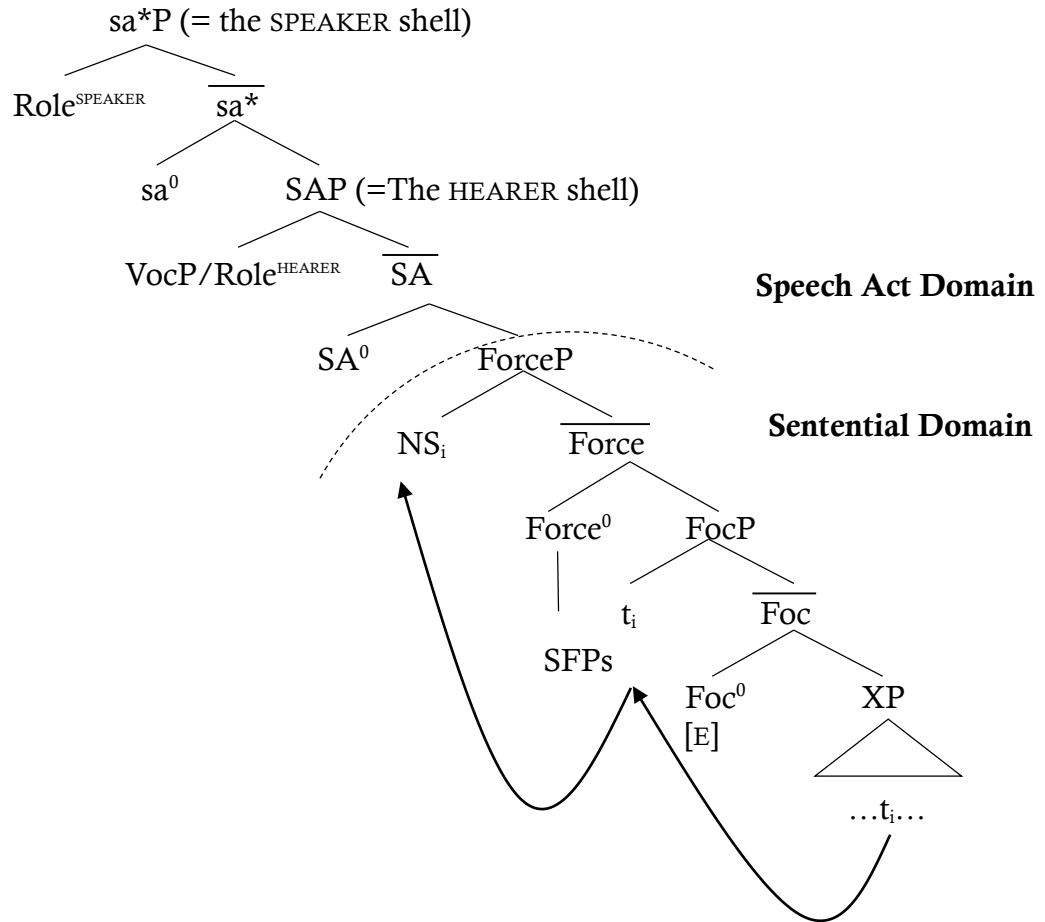
Nevertheless, these C-elements cannot be treated as projecting independently in the CP domain. As discussed in Rizzi's (2005) truncation parametrization, a maximal expression can start from ForceP and continues with the positions of the left periphery, and Force remains the unmarked case that is always available to function as the root with other categories. The amount of truncation permitted in root clauses has to do with parametric choices. Interpreted under this view, NSs involve a layer of functional projections that can be truncated out of the CP periphery. Put another way, as will be argued in Section 4, this truncated functional structure can be treated as a speech act layer

dominating the sentential domain of ForceP and encoding speech act and discoursal information. What's more, another interesting issue bearing on NSs is root properties of NSs. De Cat (2013) points out that French NSs can be accompanied by dislocated topic NPs restricted to main clauses and cannot be embedded. This leads her to argue that the properties licensing root phenomena are interpretative in nature, and the licensing results from the interaction between the interpretative properties of root phenomena and the properties of their hosts. One of the properties pertains to speaker involvement. Her view is supported by the fact that Mandarin NSs can be surrounded by SFPs encoding the speaker's attitude and discourse particles signaling that the speaker serves as the anchor of point of view of a proposition, which will be detailed in this chapter. The goal of this chapter is to propose an analysis that can be motivated to account for these properties.

In this chapter, I will propose that the syntax-discourse properties can be clausally substantiated by a layer of functional projections in the CP periphery, as instantiated in (2). It is demonstrated that NSs minimally involve a speech act layer (consisting of sa*P and SAP) and ForceP (Speas and Tenny 2003), accounting for the presence of discourse particles and the vocative *ni* (SaP), various types of illocutionary force and SFPs in Mandarin NSs. It follows that the complicated interpretative components of NSs are due to an articulated speech act layer dominating ForceP, which serves the gateway from syntax to discourse. Besides, along the line of the lexicalist view that information structural notions are determined in the lexicon (Aboh 2010), it will be shown that NSs are assigned the [Focus]-feature in the numeration and interpreted as new information in the context. Nonetheless, certain syntax-discourse interface properties, including clause typing information, and speech act, have to be substantiated by a truncated structure in the topmost field of the CP periphery. As depicted in (2), there is a division of labor between the lexicon and syntax with respect to how they interface with discourse. Precisely, the speech act layer serves an interface relating to the immediate context, which in turn involves SPEAKER and HEARER. The licensing condition of these two discourse roles have to be externalized in some way to the computation system because it is acutely sensitive to the universality of discourse, which cannot be dictated by the computation system. In spite of the nature of externalization, the speech act layer, as part of the computation system, serves as a means of the interface between syntax (the computation system in a broad sense) and discourse. Focus, by contrast, pertains to the truth conditions and is independent of the immediate context. Thus, as a formal feature, it can be assigned in the

numeration, different from discourse properties, which I argue have to be substantiated by the speech act layer.

(2) The proposed structure of NSs



The game plan of this chapter is as follows. In Section 2, I will offer another two set of Mandarin NS data, and demonstrate the ordering restriction to which discourse particles and the vocative phrase clustered in NSs are subject. It will be underscored that the ordering restriction provides clues for another layer of functional projections above ForceP. Previous studies that address the interaction of discourse particles with the vocative under the sa*P analysis (Speas and Tenny 2003) are reviewed in Section 3. It will be demonstrated that there is a Speech Act shell dominating ForceP in the CP periphery and which can be further articulated as sa*P (the SPEAKER domain) and SAP (the HEARER domain). I will present my proposed analysis in Section 4 and decomposing the hidden structures of Mandarin NSs. Section 5 concludes this section with the discussion on root properties of Mandarin NSs and implications for the syntax-discourse interface.

2. Ordering restrictions

I will demonstrate in this section that NSs can be accompanied by a set of discourse particles, and the vocative phrase *ni* ‘you’ is able to occur in more than one position. As will become clear in Section 3, there is an intricate syntax-discourse mapping relation between discourse particles and the vocative phrase in the CP domain; to be precise, they belong to the same speech act layer above ForceP, and the vocative phrase is licensed by discourse particles.

2.1 Discourse particles in Mandarin Nonsententials: *eh*², *oh* and *xu*²

It is observed that the information carried by NSs can be integrated into the current common ground by discourse particles. Three discourse particles are discussed here, *eh*², *oh* and *xu*² as follows.

Consider (3) and (4), where the NP NS and the AdvP NS are compatible with the discourse particle *eh*². According to Hsu (2016), *eh*² can be employed to serve various discourse functions, such as attention marking, surprise marking and interrogation initiation. Notice that *eh*² is restricted to the utterance-initial position.

(3) NP NS with the discourse particle *eh*².

Context: Zhangsan promises to give his girlfriend a Christmas gift tonight. Upon seeing Zhangsan not carrying anything, his girlfriend utters...

*Eh*², [liwu]_{NS} (**eh*²)/ne, (**eh*²)/ni?
D.PART gift D.PART / SFP₂ D.PART /you.VOC
‘Gift, you?’

⇒ **The speaker initiates the conversation by attracting the hearer’s attention while initiating interrogation.**

[Clause Type: Interrogative; Speech Act: Directive]

(4) AdvP NS with the discourse particle *eh*².

Context: The teacher talks to her student after attending his presentation...

*Eh*², [henjingcai]_{NS} (**eh*²)/ou, ni
D.PART very impressive D.PART/SFP₂ you.VOC

‘Very impressive, you!’

⇒ **The speaker initiates the conversation by attracting the hearer’s attention while expressing his surprise.**

[Clause type: Declarative; Speech act: Expressive]

Besides, as illustrated in (5) and (6), the discourse particle *oh* behaves similarly to the discourse particle *eh*². In (5), *oh* is used by the hearer to express his confirmation of the information from the speaker that he was summoned by the teacher, and in (6), the hearer confirms his reception of the information that the speaker eats too much salty food. *Oh* in (5) and (6) conveys the speaker’s indifference to the information, in addition to its information confirmation function. It should be noted that the distribution of *oh* is restricted to the utterance-initial position, too.

(5) NP NS with the discourse particle *oh*

Context: Zhangsan shares with Lisi what happened to him when he was summoned for a meeting by Professor Lin, and Lisi utters ...

| | | | |
|--------|--------------------------|--------------------------|---------|
| Oh, | [jieguo] _{NS} , | (*oh)/ne, | ni? |
| D.PART | result | D.PART /SFP ₂ | you.VOC |

Intended ⇒ ‘What happened to you then?’

⇒ Lisi confirms the reception of Zhangsan’s story while expressing his indifference to the matter.

[Clause Type: Interrogative; Speech Act: Directive]

(6) AdvP NS with the discourse particle *oh*

Context: Zhangsan tells Lisi that he has edema, because he eats too much salty food, and Lisi utters...

| | | | |
|--------|---------------|--------------------------|---------|
| Oh, | [changchang], | (*oh)/ou, | ni? |
| D.PART | often | D.PART /SFP ³ | you.VOC |

‘Very often, you?’

⇒ Lisi confirms the reception of Zhangsan’s healthy problem while expressing his indifference to the matter.

[Clause Type: Interrogative; Speech Act: Directive]

The discourse function of the last discourse particle xu^2 is attention capturing and shows the speaker's intension to stop the hearer from mentioning topics considered inappropriate or making current situations not unknown in the immediate context (Liu 2011). Similar to the above two discourse particles, the distribution of xu^2 is restricted to the utterance-initial position. (7) is felicitous in the context that *Zhangsan* gives *Lisi* a souvenir by employing the discourse particle xu^2 to capture *Lisi*'s attention, while expressing his intension of reminding *Lisi* of not making any response in the immediate context because *Zhangsan* wishes to keep it under the table. Besides, the SFP₃ *ou*, which is proposed to express a warning (Paul 2014), is used to convey *Zhangsan*'s attitude toward this souvenir-giving event such that it has to be taken privately in the form of warning.

(7) NP NS with the discourse particle xu^2

Context: Zhangsan walks toward Lisi in the office room and utters...

Xu^2 , [liwu]_{NS}, (* xu^2)/ou, ni.

D.PART souvenir D.PART/SFP₃ you.VOC

'Gift, you!'

⇒ **Zhangsan attracts Lisi's attention and warn Lisi of not reacting to the current situation in the immediate context.**

Likewise, in (8), while noticing that *Lisi*'s movement might be so fast as to capture the teacher's attention, *Zhangsan* attracts *Lisi*'s attention and warns him that he should move slowly without making himself spotted by the teacher. The SFP *ou* is also used to strengthen the sense of warning in the immediate context.

(8) AdvP NS with the discourse particle xu^2

Context: Zhangsan and Lisi are late for the class, and decide to sneak into the classroom secretly. While slipping into the classroom, Zhagnsan murmurs to Lisi...

Xu^2 , [manmande]_{NS} (* xu^2)/ou, ni!

D.PART slowly D.PART/SFP₃ you.VOC

'Slowly, you!'

⇒ **Zhangsan attracts Lisi's attention and warns Lisi of his action that should be slow in the immediate context.**

An interesting question to ask is what these discourse particles function in the discourse? As detailed in Hsu (2016), *eh*² and *oh* are conversational and interactional, and imply the obligatory presence of the entities involved in the specific commutative situation (the speaker and the hearer/addressee). What's more, they are not truth-conditional; that is, their presence does not cause any interpretative redundancies but contribute discursive information to the utterances with which they pattern. I suggest that Hsu's reasoning equally applies to the discourse particle *xu*². Notice that each of these particles has multiple functions, as summarized in (9).¹⁰⁴

(9) Functions of *eh*², *oh* and *xu*²

| | Discourse functions | Cognitive functions |
|------------------------|--|--|
| <i>eh</i> ² | Attention making, surprise marking and interrogation initiating | discovery, counter-expectation, wonder |
| <i>oh</i> | Recipience of the interlocutor's information and speaker's reasoning/understanding process | impatience, indifference, unhappiness |
| <i>xu</i> ² | attention capturing | warning of current situations that should be made not public in the immediate context. |

Given the multiple functions of each particle, *oh* in (10) can be used by the speaker to coordinate his utterance in a long sketch of discourse, in addition to expressing his recipience process of the old information already in the discourse. By contrast, *eh*² in (11) is used by the speaker to initiate interrogation while expressing his wonder at the same time.

- (10) *oh ta shuo de kenning shi zhe-yi kuan he zhe-yi kuan.*
 D.PART he say DE probably be this-one kind and this-one kind
 'Oh what he refers to may be this kind and that kind.'

¹⁰⁴ Hsu's (2016) empirical coverage does not include *xu*², whose functions are detailed in Liu (2011). However, careful scrutiny of Liu's descriptions of *xu*² suggests that *xu*² can be readily captured by Hsu's analysis. As will be shown in Section 4, discourse particles share common properties that can be syntactically represented by a speech act layer (Speas and Tenny 2003).

- (11) Eh², Ji-dian le xianzai?
 D.PART how many-clock ASP now
 ‘(Talking to the addressee) what time is it now?’

(Hsu 2016, p.98, ex.30)

As the alert reader might wonder, how are these discourse particles related to the structure of NSs? In Section 3, I will illustrate that discourse particles and the vocative phrase constitute an independent speech act layer in the topmost position in the CP layer, and the speaker involvement characterizing NSs (De Cat 2013) is encoded by discourse particles. However, the occurrence of these three discourse particles is restricted to the utterance-initial position, and each of the particles has two functions. It is worth taking time to discuss the position of particles and show how the position is closely related to their functions. In discussing the syntax of the speech act (verb-based) particle *hai* in Romanian, Haegeman and Hill (2013) point out that, as illustrated in (12), the interpretation of *hai* is computed according to its position with respect to the vocative. In (12)a, where the vocative precedes *hai*, *hai* foregrounds the vocative and enforces attention drawing, whereas in (12)b, in which *hai* precedes the vocative, *hai* conveys exasperation or enhanced mitigation. (*vai* ‘ah’ is a speaker-oriented marker as well as a lamenting marker expressing the speaker’s feeling, whereas *hai* is a hearer-oriented particle). It is obvious that *hai* has two functions. Analyzed on a par with the multiple functions of *eh*² and *oh*, the discourse function of *hai* is to signal attention catching of the hearer, and the cognitive function of it is to express the speaker’s point of view of the utterance. Under a cartographic approach to the CP periphery, the multiple functions correspond to two independent functional projections. We will turn to the embodiment of these functional projections in Section 3.

(12) The particle *hai* in Romanian

- a. Vocative > *hai* (⇒ attention-drawing)

Vai Dane hai că nu te cred.

VAI Dan.VOC HAI that not you believe.1SG

‘Ah, Dan, c’mon, I don’t believe you.’

b *hai* >Vocative (⇒ expressing exasperation or enhanced mitigation.)

Vai, hai Dane cǎ nu te cred

VAI HAI Dan.VOC that not you believe.1SG

‘Ah, c’mon, Dan, I don’t believe you.’

(Modified from [Haegeman and Hill 2013](#), p.380, ex. 15a and 15c)

2.2 NS-initial and utterance-final vocative phrase

In Chapter 4, I have shown that the vocative phrase *ni* ‘you’ occurs in the utterance-final position. However, the vocative phrase is also able to occur in the pre-NS position, as evident in (13) and (14) (a prosodic pause between the vocative phrase and the NS is preferred; in other words, the discourse particle and the vocative phrase are preferably parsed as a prosodic unit).¹⁰⁵ Similar to the utterance-final vocative phrase, the pre-NS vocative phrase relies on the presence of SFPs for its legitimate presence. That is, if the SFPs in (13) and (14) are dropped, the two examples are degraded.

(13) The vocative in the pre-NS position

Context: Zhangsan shares with Lisi what happened to him after he was summoned for a meeting by Professor Lin, and Zhangsan utters ...

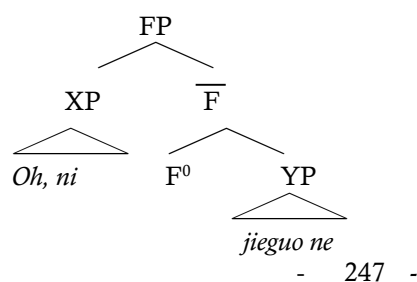
| | | | | |
|--------|---------|---|---|------------------|
| Oh | ni, | # | [_{NP} jieguo] _{NS} , | *(ne) |
| D.PART | you.VOC | | result | SFP ₂ |

Intended ⇒ ‘What happened to you then?’

⇒ **Zhangsan confirms the reception of Lisi’s story while his expressing indifference to the matter.**

¹⁰⁵ Hsiao-hung Iris Wu (p.c.) suggests an alternative analysis of the vocative in the pre-NS position, as in (13) and (14): If a prosodic pause can be treated as signaling a sentence-boundary marker, it follows that (13) can be analyzed as involving a juxtaposition of two independent clauses, as instantiated in (i.) However, as there is a lack of evidence consolidating this analysis at the moment, I will leave this alternative view for another occasion while adopting the monoclausal view of NSs like (13) and (14).

(i.)



[Clause type: Interrogative; Speech act: Directive]

(14) The vocative in the pre-NS position.

Context: The teacher talks to her student after attending his presentation...

Eh² ni, # [AvdO hen jingcai]_{NS} *(ou)!

D.PART you.VOC very impressive SFP₂

'Very impressive, you!'

⇒**The speaker initiates the conversation by attracting the hearer's attention while expressing surprise.**

[Clause Type: Declarative; Speech Act: Expressive]

In Section 2.2, it is mentioned that discourse particles and the vocative phrase are regarded as the elements in the speech act layer but it remains not clear why the vocative phrase relies on SFPs for its presence. As will be detailed in Section 3, this association provides robust evidence in favor of the speech act layer taking ForceP as its complement. For concreteness, if SFPs project as ForceP taken by the speech act layer, it follows that the presence of the vocative phrase always entails that of SFPs.

3. Speech act layer in the CP periphery

In this section, I will review several studies that bear on the embodiment of discourse particles and the vocative phrase in the CP periphery. The core generalization is that the presence of the vocative phrase and discourse particles is a manifestation of a speech act layer dominating the sentential domain of clauses (ForceP). The topmost structure, the speech act layer, can be viewed as a syntactically encoded interface between the utterance and the discourse ([Haegeman 2014](#)).

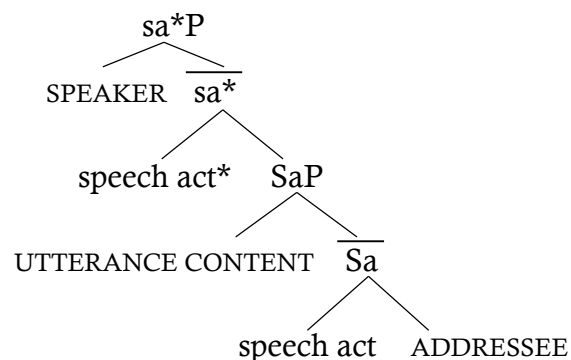
3.1 sa*P and SAP (Speas and Tenny 2003; Tenny 2006)

Under the cartographical approach to the left periphery ([Rizzi 1997](#); [Cinque 1999](#)), it has been argued recently that discourse information, lexically incarnated by discourse particles, can be syntacticized as a functional layer above ForceP. Along this line, sentential

architecture is claimed to involve a structural domain above CP, which is dedicated to mapping the discourse-related information, such as the encoding of the notion of speaker and addressee. Speas and Tenny (2003)¹⁰⁶ propose that CP is dominated by another Larsonian (1988) shell structure, Speech Act Phrase (Sa*P), as visualized in (15). SPEAKER, ADDRESSES, and UTTERANCE CONTENT are thematic p(ragmatic)-arguments/discourse participants in the speech act shell. The highest thematic argument of sa*P, SPEAKER, is the agent of the speech act. The theme of the speech act is the information conveyed, UTTERANCE CONTENT. The goal argument of the speech act is ADDRESSEE. Speas and Tenny indicate that (15)a represents a declarative clause, and the SPEAKER c-commands the ADDRESSEE and anchors the point of view in the interrogative clause. By contrast, the interrogative is explained by a flip of UTTERANCE CONTENT with respect to the discourse participants (SPEAKER and ADDRESS). As illustrated in (15)b, the Interrogative Flip is a syntactic operation, analyzed on a par with dative shift in the sense of the Larsonian VP shell, where ADDRESSEE undergoes movement to [Spec, SAP] (and UTTERANCE CONTENT is demoted to an adjoined position), and becomes the closer c-commander of UTTERANCE CONTENT and the anchor of the point of view in the interrogative. Similar to the interrogative, the imperative also involves the Interrogative Flip, according to which ADDRESSEE moves to [Spec, SaP] and controls UTTERANCE CONTENT, and UTTERANCE CONTENT is associated with a non-finite argument.¹⁰⁷

(15) The sa*P analysis of clause types

a. Declaratives

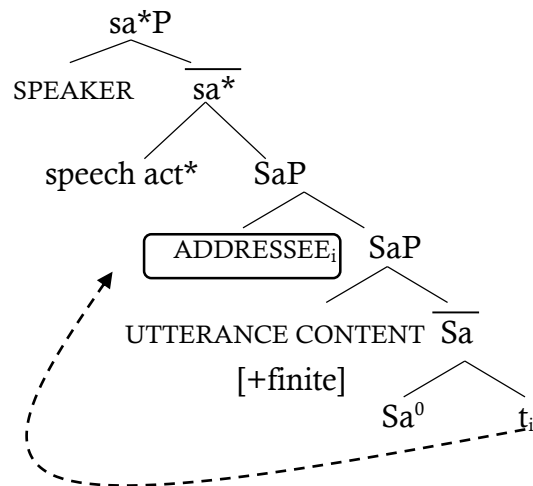


(Speas and Tenny 2003: 320, with minor notational changes)

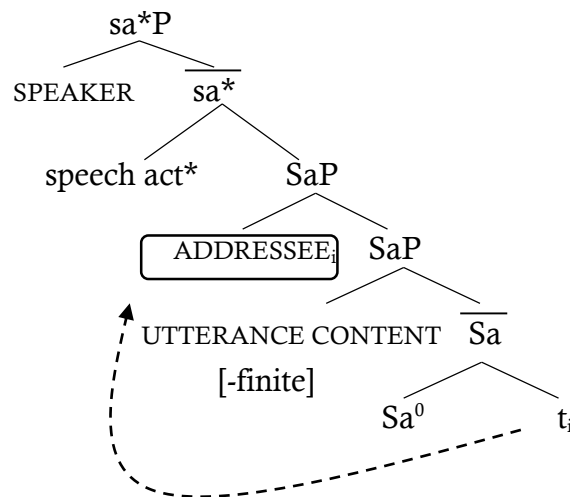
¹⁰⁶ The interested reader is also referred to Gärtner and Steinbach (2006) for an opposite view of the syntactic representation of sa*P.

¹⁰⁷ As finiteness in Mandarin remains rather controversial, I will leave it aside for expository reason. The interested reader is referred to Grano (2017), Sybesma (2017) and Tsai (2008) for in-depth discussion on the association between tense and finiteness in Mandarin.

b. Interrogatives



c. Imperatives



As discussed in [Tenny \(2006\)](#), the proposed speech act layer receives empirical support from Japanese particles. As illustrated in (16)a, the report style can be enforced by the sentence-final particle *-yo* in Japanese, which can be interpreted as ‘I am telling you that...’. In contrast, as evident in (16)b, the person constraint is observed in the sentence accompanied by the question particle *-ka*; the thematic subject is obligatorily understood as the second person.

(16) Japanese

a. **The declarative clause**

Watashi wa samui-yo.

I TOP cold-YO

‘(I am telling you that) I am cold.’

([Tenny 2006](#), p. 248, ex. 10)

b. **The interrogative clause**

Kyoo wa samui desu ka?
 today TOP cold COP-PRE Q

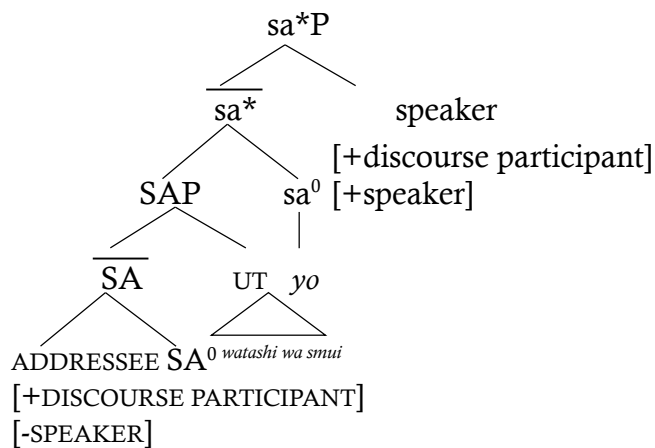
‘Today is it cold/*Today am I cold/Today are you cold/*Is he cold?’

(Tenny 2006, p. 247, ex. 6)

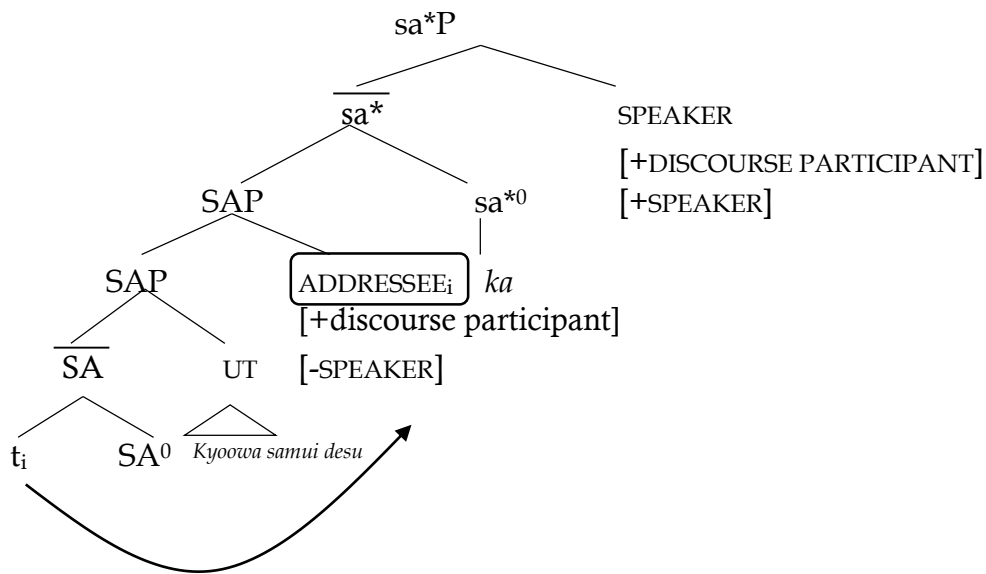
Endorsing the postulation of the speech act layer, Tenny (2006) argues for two syntax-discourse mapping structures in (17)a-b for (16)a-b, showing that *yo* and *ka* are sa^{*0} . In (17)a, SPEAKER is the anchor of point of view, and *watashi* ‘I’ in UTTERANCE CONTENT is associated with [+Speaker]. In marked contrast, (17)b shows that ADDRESSEE undergoes the Interrogative Flip to [Spec, SAP] and anchors the point of view of UTTERANCE CONTENT. As evident in (16)b, the salient reading indicates that the subject is the second person (ADDRESSEE). Under the analysis in (17)b, the reading is explained in the way that ADDRESSEE is the closer c-commander of UTTERANCE CONTENT and is able to be associated with the implicit subject in UTTERANCE CONTENT.

(17) The proposed structure of the speech act in Japanese

a. The declarative clause (= (16)a)



b. The interrogative clause (= (16)b)



Interrogative Flip

Speas and Tenny’s speech act system provides a transparent syntax-discourse mapping relation by enriching the left periphery. The entire structures (15)a-c, the speech act layer, can be regarded as a syntactically encoded interface between the utterance and the discourse (Haegeman 2014).

It is quite tempting to extend Speas and Tenny’s analysis to NSs discussed above. In the following three sub-sections, I will review three analyses of discourse particles and the vocative in other languages, extending and refining the saP analysis in (15). Surely, as the alert reader might be aware, a set of satellites surrounding Mandarin NSs are the elements clustered in the speech act layer.

3.2 The discourse particle *né* in West Flemish (Haegeman and Hill 2013; Haegeman 2014)

In West Flemish (WF), the discourse particle *né* has two discourse functions according to its position with respect to the vocative phrase. As illustrated in (18), when *né* precedes the vocative phrase *Valère* in the utterance-initial position, its discourse function is to draw the hearer’s attention. (18)b further illustrates that the sequence *Valère > né* is disallowed. In marked contrast, when the sequence *né > Valère* occurs in the utterance-final position in (19), the discourse function of *né* is to wind up the utterance and signal a transfer to the hearer.

(18) The distribution of the particle *né* in WF in relation to the vocative

a. ^{ok} *né* > vocative

Né Valère, men artikel is gereed (wè).
né Valère.voc my paper is ready

b. *vocative > *né*

*Valère né, men article is gereed (wè).
Valère.voc né my paper is ready

(Heagemen and Hill 2013, ex. 30a, b)

(19) The (tag) vocative in the utterance-final position in WF

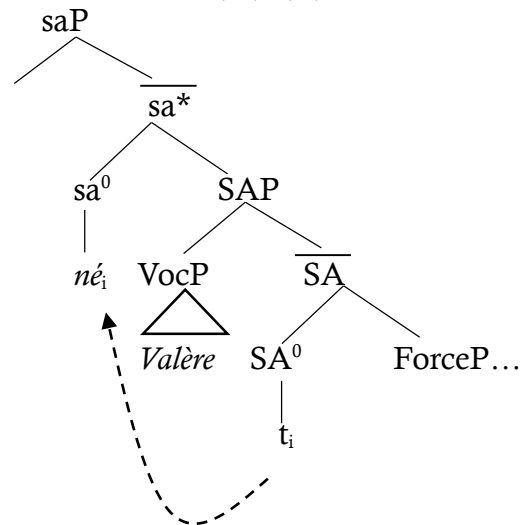
[_{CP} Men artikel is gereed], né, Valère.
my paper is ready né Valère.voc

(Modified from Heagemen 2014, ex. 25c)

One interesting question to raise is why the particle *né* has such multiple discourse functions in two positions respectively. To account for the syntax-discourse mapping of the WF discourse particle *né*, Haegeman and Hill (2013)¹⁰⁸ argue for a speech act layer analysis, which can be articulated further into two functional projections, above ForceP, as instantiated in (20). The claim that the Role^{HEARER} can be overtly realized as *Valère* licensed within SAP (precisely, [Spec, SAP]), and SA⁰ undergoes head-movement to sa*⁰. The head-to-head movement thus explains the sequence *né* > vocative in (18)a-b.

¹⁰⁸ See Haegeman (2014) for a more refined analysis of the discourse particles.

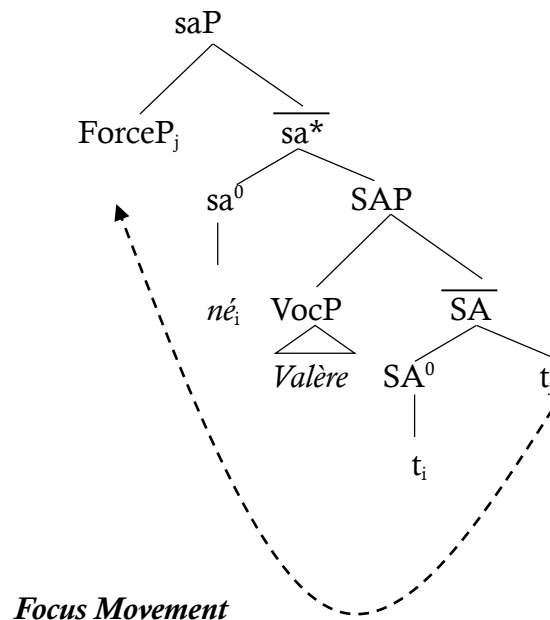
(20) The sa*P analysis of the particle *né* in WF (=18)a)



(Modified from Haegeman and Hill 2013, ex. 31a)

(21) illustrates the proposed analysis of (18)b. Compared with (20), (21) involves movement of ForceP to [Spec, saP]. Haegeman and Hill (2013) indicate that this movement has a foregrounding effect on the moved ForceP, and assume that it is an instance of focus movement.

(21) The sa*P analysis of the particle *né* in WF(=18)b)



Another complication needs to be added here. In discussing the syntax of the speech act (verb-based) particle *hai* in Romanian, Haegeman and Hill (2013) point out that, as illustrated in (22), the interpretation of *hai* is computed according to its position in relative

to the vocative phrase. In (22)a, where the vocative precedes *hai*, *hai* foregrounds the vocative, for attention-drawing, whereas in (22)b, in which *hai* precedes the vocative, *hai* conveys exasperation or enhanced mitigation. (*vai* ‘ah’ is a speaker-oriented marker as well as a lamenting marker expressing the speaker’s feeling, whereas *hai* is a hearer-oriented particle.) Haegeman and Hill ascribe the interpretative differences to whether *hai* undergoes head-movement, as instantiated in (23).

(22) The discourse particle *hai* in Romanian

a. **Vocative > *hai* (⇒ attention-drawing)**

Vai Dane *hai* *că nu te cred*
 VAI Dan.VOC HAI that not you believe.1SG
 ‘Ah, Dan, c’mon, I don’t believe you.’

b. ***hai* > Vocative (⇒ expressing exasperation or enhanced mitigation)**

Vai, *hai* Dane *că nu te cred*
 VAI HAI Dan.VOC that not you believe.1SG
 ‘Ah, c’mon, Dan, I don’t believe you.’

(Modified from Haegeman and Hill 2013, p.380, ex. 15a and 15c)

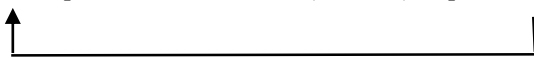
(23) The proposed analysis

a. **Vocative > *hai* (= (22)a)**

[_{saP} [_{sa}’ [_{SAP} Vocative(=*Dane*) [_{SAP}’ *hai* [[[_{ForceP} ...]]]]]

b. ***hai* > Vocative (= (22)b)**

[_{saP} [_{sa}’ *hai* [_{SAP} Vocative(=*Dane*) [_{SAP}’ ~~*hai*~~ [[[_{ForceP} ...]]]]]



In line with the analysis of the discourse particle *né* in WF, *hai* is able to head-move. However, there are three points worth our attention in (23). First, two speech act projections are responsible for two discourse role domains. Take (23)a for example. While *hai* merges as SAP⁰, it acquires the discourse function of attention capturing. By contrast, after it head-moves to sa*⁰, it encodes the speaker’s feeling/view regarding the proposition. The asymmetry can be ascribed to the discourse of two speech act projections that are analyzed on a par with a VP shell; sa*P is responsible for the discourse participant SPEAKER and it constituents the speaker domain, whereas SAP licenses the discourse

participant HEARER and belongs to the hearer domain. HEARER, when overtly realized in [Spec, SAP], bears the attention-catching discourse feature via a Spec-Head relation with SAP⁰. This position is able to license the vocative, whose function is to address the hearer/addressee in the immediate context by capturing his/her attention. Second, [Haegeman and Hill \(2013\)](#) conclude that discourse particles of direct address are computed syntactically at the edge of clauses, beyond what is usually referred to as the CP layer. Third, in light of Romanian particles, it follows that the articulation of the speech act can be two-layered; the high speech act layer encodes the setting up of the discourse layer such as attention-seeking, whereas the lower layer encodes the discourse relation such as bonding. Consider the vocative *Dane* in (24)a-b. The vocative *Dane* in (24)a is attention-seeking, whereas that in (24)b has a bonding reading. [Haegeman and Hill \(2013\)](#) attribute the two types of vocative to two types of speech layers which the vocatives merge to respectively. Each speech act layer has specialized discourse functions. Nevertheless, though there is a lack of robust evidence showing whether this articulated two-layered speech act structure is parametrized to be present in the CP periphery of Mandarin, there is ample empirical evidence, as will be discussed in Section 3.4, showing that the speech act layer exists.

(24) Two types of vocative in Romanian

- | | | | | | | |
|----|-------------|------|------|------|----------|----------|
| a. | Dane, | hai | lasă | [nu | te | enerva]. |
| | Dan.VOC | HAI | lasă | not | REFL | upset |
| b. | Hai Dane | lasă | [nu | te | enerva]. | |
| | HAI Dan.VOC | LASĂ | not | REFL | upset | |

([Haegeman and Hill 2013](#), p.387, ex. 29a and 30a)

(25) The proposed analysis of (24)a-b

- | | |
|----|---|
| a. | [_{sa} P1 [_{sa} 1] [_{SAP} 1 <i>Dane</i> [_{SA} 1 <i>hai</i>] [_{sa} P2 [_{sa} 2] [_{SAP} 2 [_{SA} 2 <i>lasă</i>][ForceP]]]]]] |
| b. | [_{sa} P1 [_{sa} 1] [_{SAP} 1 [_{SA} 1 <i>hai</i>] [_{sa} P2 [_{sa} 2] [_{SAP} 2 <i>Dane</i> [_{SA} 2 <i>lasă</i>][ForceP]]]]]] |

([Haegeman and Hill 2013](#), p.387, ex. 29b and 30b)

3.3 The Korean discourse particle –yo (Choi 2016)

Following [Haegeman and Hill's \(2013\)](#) sa*P system, [Choi \(2016\)](#) argues that the

Korean discourse particle *-yo*, which exhibits a speaker-hearer relation, is an syntactic incarnation of SA⁰. Empirical observations are as follows. First, the Korean discourse particle *-yo* is used by the speaker to express politeness toward the hearer. The sentence-final discourse particle *-yo* in the utterance (26) is felicitous if the speaker is inferior to the hearer.

(26) The Korean discourse particle *-yo* used only in the politeness context

a. Inho-ka cip-ey ka-yo.

Inho-NOM home-to go-POLITENESS

‘Inho goes home.’

b. Emma-ka cip-ey ka-yo.

mother-nom home-to go-POLITENESS

‘Mommy will go home.’

(Choi 2016, p.67, ex.2a-b)

Second, the discourse effect of *-yo* is able to scope out sentential negation, as evident in (27). This can be taken to suggest that *-yo* is merged in a topmost position above sentential negation.

(27) The discourse particle *-yo* scopes out negation.

Cey-ka cip-ey an(i) ka-yo.

I.HUM-NOM home-to NEG go-POLITENESS

‘I will not go home.’

(Modified from Choi 2016, p.68, ex.7)

Third, the interaction of *-yo* with the vocative phrase is constrained by the speaker-hearer relationship. Choi points out that the overt vocative particle *-ya* indicates that the speaker is superior to the hearer, and it follows that *-ya* is predicted to be incompatible with *-yo*, which is a politeness discourse particle. The prediction is born out in (28).

(28) The discourse particle *-yo* is incompatible with the vocative particle *-ya*

a. Helmenti(*-ya), halmeni-kkeyse cip-ey ka-sie-yo

grandmother-VOC grandmother-HON home-to go-HON-POLITENESS

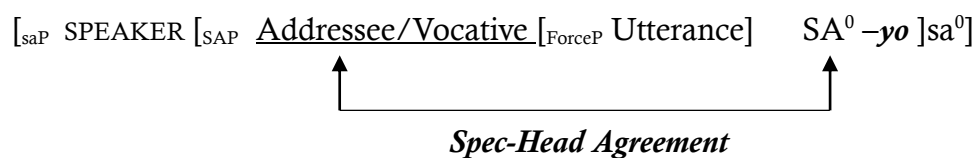
‘Grandmother goes home.’

- b. Helmenti(*-ya), Inho-ka cip-ey ka-yo
 grandmother-VOC Inho-HON home-to go-POLITENESS
 ‘Grandmother, I (=Inho) will go home.’

(Choi 2016, p.69, ex.9a-b)

In line with Haegeman and Hill’s (2013) analysis (see Section 3.2), Choi also argues for a sa*P analysis of the discourse particle *-yo*, as instantiated in (29).¹⁰⁹ It is illustrated that SA⁰ and the vocative enter a Spec-Head agreement, and SA⁰ is overtly realized as *-yo* when the Addressee argument in [Spec, SAP] bears a pragmatic-feature for politeness.

(29) The sa*P analysis of the Korean discourse particle *-yo*



As pointed out by Choi, the analysis (29) can be further motivated to explain the root property or the main clause property of discourse particles in the way that these particles are restricted to root clauses rather than embedded clauses.

All in all, Choi’s sa*P analysis of the discourse particle *-yo* readily captures the interaction of *-yo* with the vocative phrase in the way the presence of *-yo* is incompatible with the presence of the vocative particle *-ya* because the politeness conveyed by *-yo* is incompatible with *-ya* used in the informal context. Nevertheless, it is worth noting that *-yo* does not undergo SA⁰-to-sa⁰ movement like *hai* in Romanian (Haegeman and Hill 2013) and *né* (Haegeman and Hill 2013; Haegeman 2014). As discussed above, sa*P is the speaker domain, and it is predicted that any X⁰ moving to sa*⁰ acquires the additional interpretative import, such as the speaker’s point of view of utterances. *-yo* under discussion lacks this interpretative property, and it follows that it merges as SA⁰.

3.4 Refutatory sentence-final adjunct ‘what’ in Mandarin (Yang 2017a, b)

¹⁰⁹ (29) represents the head-final phrase structure which characterizes the head-finality of Korean languages.

Yang (2017a, 2017b) investigates the refutatory use of the sentence-final adjunct *sheme* ‘what’ (RSAW) in Mandarin, as shown in (30). Three core properties are as follows. First, the RSAW (in bold) is devoid of interrogativity; in other words, *shenme* ‘what’ is not interpreted as the reason-asking *WHAT*, but it is intended by the speaker to refute the interlocutor’s words.

(30) Refutatory sentence-final adjunct *sheme* ‘what’

A: Ta hao gao/shuai a!

He so tall/handsome EXCL

B: Gao/Shuai **shenme!**

tall/handsome what

‘It’s not right for you to say “[he] is tall/handsome”!’

(Yang 2017a, p.1, ex.1)

Second, the constituent preceding the RSAW must be repeated or quoted from the previous utterance, as evident in (31), where only (31)B’ is a felicitous continuation of (31)A. Yang further notes that the RSAW can be attached to any constituent as long as it is quoted from the interlocutor’s words.

(31) A: Ta hao piaoliang ya!

he so beautiful EXCL

‘She is so beautiful!’

B: #(Ta) mei sheme!

she pretty what

B’: (ta) piaoliang sheme

she beautiful what

‘It is not right for you to say “she is beautiful”!’

Third, the RSAW always takes the undominated scope. As shown in (32), the interpretation of the RSAW is not included within the scope of *laoshishuo* ‘honestly’, which is arguably a speech act adverb merged to the topmost position in the hierarchy of adverbs (Cinque 1999).

(32) RSAW takes the undominated scope

Laoshi-shuo sheme!

honestly what

'It is not right for you to say "honestly"!'

(Yang 2017a, p.5, ex. 24)

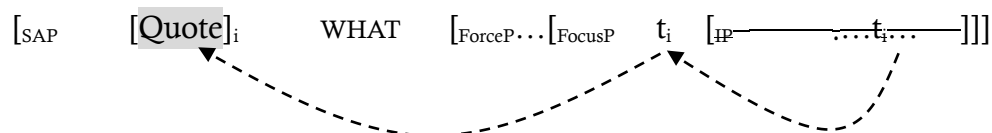
The above observations point to an interpretative template, as visualized in (33), where the addition of the RSAW to Quote triggers the speech act of refutation. Following [Speas and Tenny's \(2003\)](#) sa*P analysis, Yang argues that the syntactic mapping of the interpretation in (33) has an articulated structure in (34). Yang claims that the refutatory WHAT heads the SAP, and two-step movement is activated; Quote moves to [Spec, FocP] to derive a focus interpretation, and further moves to [Spec, SAP] to acquire the refutatory interpretation, in addition to deriving the correct word order. The derivation eventuates with the sluicing of TP at PF in the sense of [Merchant \(2001\)](#).

(33) Surface form

[[Quote]WHAT]

'It is not right for you to say "Quote"!'

(34) The proposed analysis of (33)



Yang's analysis is rather insightful in the sense that it offers a straightforward account of the refutatory use of *what* in Mandarin, and lends weight to the postulation of the speech act layer dominating ForceP in Mandarin. Nevertheless, I would like to point out two downsides that might undermine the analysis (34). First, the refinement of the speech act analysis advanced, for example, in [Haegeman and Hill \(2013\)](#) and [Haegeman \(2014\)](#), claim that the vocative is the overt realization of the discourse participant HEARER/ADDRESSEE in [Spec, SAP]. [Hill \(2007, 2013\)](#) argues that the vocative phrase is identified as the element that checks the discourse participant HEARER/ADDRESSEE. Granted this line of reasoning, it remains not clear why the vocative is disallowed in (34), as exemplified in (35).

(35) The vocative cannot occur in SAP under Yang's analysis

- a. *_{[SAP ni [SAP laoshi-shuo [SA⁰ sheme [ForceP...[FocusP t_i [IP...t_i...]]]]]}
 you.VOC honestly WHAT
- b. *_{[SAP laoshi-shuo [SAP ni [SA⁰ sheme [ForceP...[FocusP t_i [IP...t_i...]]]]]}
 honestly you.VOC WHAT

Second, careful scrutiny of the data in (36) suggests that some of the Quotes can be analyzed as X⁰, like the exclamative *a* in (36)a, and the modal *yinggai* in (36)d. To motivate Yang's analysis of the data in (36), it is permitted that X⁰ also undergoes head movement to a higher head position before IP sluicing operates, markedly different from Merchant's analysis that XP undergoes focus (\bar{A} -)movement that is followed by the IP-sluicing operation.

(36)

- a. QUOTE is the exclamative marker
 A sheme!
 EXCL what
- b. QUOTE is the conjunction
 Keshi/Jiarun/Yinwei sheme!
 but/if/because what
- c. QUOTE is the negative marker
 Bu sheme!
 NEG what
- d. QUOTE is the modal
 Yinggai/keneng sheme
 should/possible what

(Yang 2017a, p. 3, ex. 9-12)

Despite there being empirical and theoretical kinks to be worked out in Yang's analysis, his insight into the postulation of the speech act layer in the CP periphery of Mandarin remain illuminating.

3.5 Summary

In this section, I have reviewed three studies that are intended to concretize [Speas and Tenny's \(2003\)](#) speech act shell (sa*P and SAP) dominating ForceP and serving as the gateway toward the interface between syntax and discourse. A conclusive view is that discourse particles and the vocative can be treated as correlated in the speech act layer. In Section 4, I will motivate the sa*P analysis primarily refined in [Haegeman and Hill \(2013\)](#) and [Haegeman \(2014\)](#), and expound the view that Mandarin NSs involve the structure consisting of the speech act layer, ForceP and FocP, which encode the interpretative import of discourse information.

4. Proposal

I will discuss each interpretative component of NSs, such as focus interpretation, clause typing information, and discourse functions from Section 4.1 to Section 4.3. The core generalization is that each interpretative component corresponds to an independently-motivated functional projection in the CP periphery, mirroring a transparent one-to-one mapping relation between syntax and discourse. I sketch my analysis of Mandarin NSs in Section 4.4.

4.1 Silent functional structure of NSs and FocusP

As pointed out in Chapter 4, the major debate in the previous scholarship is whether NSs contain a fully-fledged clausal structure, say CP-TP-*v*P. [De Cat \(2013\)](#) endorses the view that there is no need to postulate an array of functional projections that will be subject to mandatory PF deletion for the hidden structure of NSs, unless there is compelling empirical evidence, which meets not only the notion of economy under the MP but also Occam's Razor. This view is also advocated by several scholars, [Progovac \(2006\)](#), [Culicover and Jackendoff \(2005\)](#), [Barton and Progovac \(2005\)](#), [Fortin \(2007\)](#) and so on. Pursuing the notion of economy, [Fortin \(2007\)](#), for instance, argues that NSs are convergent syntactic objects because they are not assigned formal features that require merge of functional projections to launch feature-checking processes, as the derivation unfolds. This

operation is permitted by the computation system, as it does not require ‘extra’ operations.

Nevertheless, one caveat has to be issued here. The proponents of a direct interpretation (or base generation) approach consistently resort to the absence of positive evidence for the postulation of clausal structure of NSs. Thus, this contributes to the debate regarding whether NSs contain clausal structure. If NSs have clausal structure and ‘invisible’ parts of the clausal structure result from PF deletion, an accompanying question is how PF deletion is executed to operate on target constituents. Put differently, I think these two questions represent two sides of the same coin in the way that if NSs have a fully-fledged clausal structure, PF deletion has to operate, or vice versa. It is not clear to me how these two issues have to be tied up this way. It seems that the absence of positive evidence for ‘deleted material structures’ entails the absence of clausal structure for NSs. There is ample reason to argue that this correlation is far from determinative if we take another perspective. As recorded in [Mao and Meng \(2016\)](#), in response to the question regarding the differences between the MP and the cartography project and how to unify them, Cinque replies:

- (37) ‘As for the combination of the two programs, I think the answer is already implicit in Chomsky’s approach and in the cartographic approach. Sometimes people who consider themselves minimalists do not pay attention to the precise mapping of the elements that the cartographers are interested in, but otherwise both groups utilize the same theoretical tools. **A minimalist may not be interested in mapping out the entire structure of nominal phrases. Maybe he or she will choose a couple of projections, NP and DP, and be content with this without trying to fill in all the intervening projections, because he or she is interested in, say, how to derive c-command or what the proper labeling mechanism is. Cartographers are instead interested in whether there is something above DP and something below, between it and the NP. That is the only difference that I see.** It is a question of what you are looking at, what you are interested in. But the two enterprises are completely compatible, it seems to me. One does not need to put in too much effort to render them compatible, so to speak.’

([Mao and Meng 2016:924-925](#))

The reply suggests itself. It is obvious that the proponents of the direct interpretation

(or base generation) approach to NSs decide to take a ‘to-see-is-to-believe’ view without considering whether a set of intervening projections, albeit silent, merge along the spine of clausal structure to substantiate certain clausal properties of NSs. It follows that the absence of positive evidence of clausal properties cannot be treated as robust evidence in support of the direct interpretation approach. As will become clear in Section 4.4, though Mandarin NSs embody a truncated structure consisting of an array of functional projections above ForceP, the truncated structure still needs to be ‘upheld’ by the TP- ν P clausal structure. What’s more, evidence from language acquisition supports the above discussion that the truncated structure still involves the CP-TP- ν P structure (Rizzi 1993/1994; Keiko 2017), to which I turn for more details in Section 5.

To motivate the proposed analysis in the following sections, I side with Cinque’s (1999:127) generalization that ‘the entire array of functional projections [is] present in every sentence’. Cinque suggests that this generalization is the least costly assumption, if each head is endowed with a marked and a default/unmarked value. For concreteness, (38)a is a simple active sentence which has the exactly same functional structure as in (38)b. Note that the difference between them lies in the presence of more morphology in the latter, owing to the association in English of particular morphemes with the marked values of some of the functional heads. (38)b is marked for Voice, Asp_{progressive}, Asp_{perfect}, Neg, Mod_{epistemic}, while (38)a has the corresponding default values. Following the line of reasoning adopted by the proponents of the direct interpretation approach, we are forced to admit that the amount of functional structure in (38)a is fewer than that of (38)b. I think that this line of reasoning is not advantageous to the assumption that (38)a and (38)b share the identical functional structure on both empirical and theoretical grounds. Though the overtness of morphology can be regarded as the negative/positive evidence for functional structures, this does not entail that the implicitness or silence of morphology points to the lack of functional structures.¹¹⁰ In this light, I take the stand that NSs involve a fully-fledged clausal structure consisting of functional projections in three layers, the lexical layer (ν P), the inflectional layer (IP) and the complementizer layer (CP), but most of functional projections in the former two layers are unmarked.

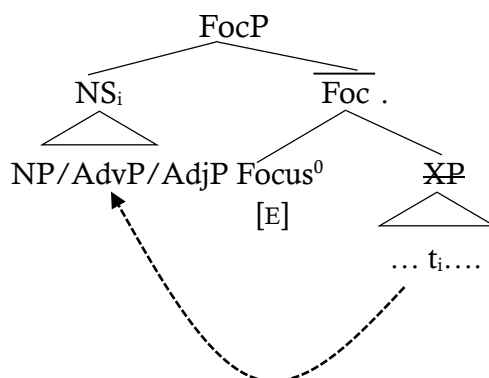
¹¹⁰ I take Sigurðsson & Maling’s (2009) view that grammatical categories (heads and/or features) are commonly present and syntactically active even though they remain silent. That is, the silence or nonmarking of a category F does not alone reach the conclusion that F is syntactically missing from either a construction or a language.

- (38) a. Prices rise
 b. Prices must not have been being raised.

(Cinque 1999, p.131, ex. 2)

In addition, I follow Valmala's (2007) view that NSs are focus constructions, due to the basic guiding intuition that NSs in question-answer pairs are the non-presupposed materials relevant for the identification of a variable in the preceding clause. The view is also espoused by De Cat (2013) that French NSs encode new information, which is embodied by FocP in the CP periphery, though she is dubious about the sluicing operation. Consistent with the line of pursuit in this dissertation- the syntax-discourse interface can be determined in the lexicon, I take the view that Mandarin NSs are assigned the [Focus]-feature in the numeration, and this has to be checked off by Foc⁰ before being sent to Spell-Out and evaluated by the interface. Nevertheless, syntax plays a role in substantiating discourse properties that are not included in the numeration. As illustrated in (39), Mandarin NSs undergo focus movement from within XP before XP undergoes sluicing. According to Merchant's (2001) movement-cum-deletion analysis, the [E] feature instructs PF not to parse the XP. Note that XP represents the silent/unmarked clausal structure of NSs. Nevertheless, (39) merely demonstrates that the basic interpretative of NSs that NSs contain non-presupposed information.

(39) The proposed structure of Mandarin NSs (Ver.1)

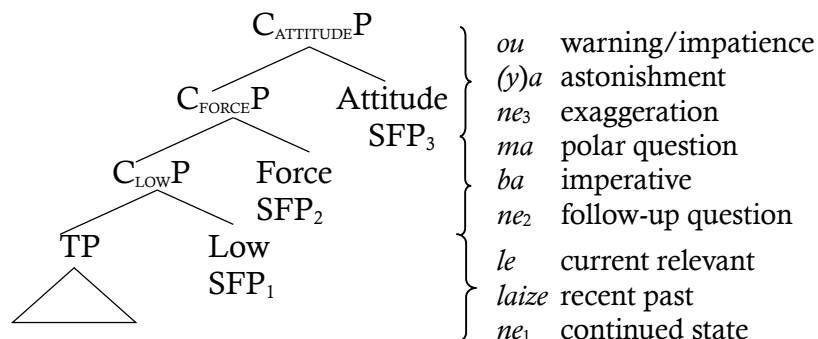


4.2 Sentence-final particles as ForceP

It has been shown that Mandarin NSs can be accompanied by two subsets of SFPs;

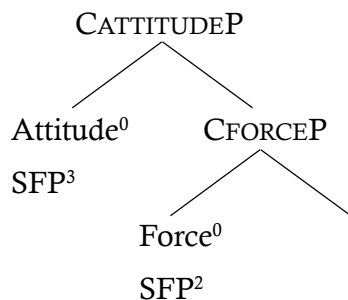
under Paul's (2014) system of Mandarin SFPs in (40), only SFP₃ and SFP₂ are compatible with Mandarin NSs.

(40) Paul's (2014) system of SFPs in Mandarin.



Nevertheless, I adopt but adapt Paul's system in (40), as recast in (41), due to the following reasons. First, it has been shown that Mandarin NSs are not compatible with SFP₁ under any context. I offer two possible explanations in Section 4.1 of Chapter 4. On the one hand, Erlewine (2017) convincingly argues that C_{LOW}P merges to the extended area of ν P. On the other hand, as pointed out by Pan and Paul (2016a), C_{LOW}P is a neutral label to replace FinP because the precise syntactic representation of finiteness in Mandarin still remains controversial. For the time being, I assume Erlewine's analysis that C_{LOW}P merges to ν P. It follows that C_{LOW}P merges to the ν P-domain in the functional structure (39) and its value remains unmarked. Therefore, it is explained that Mandarin NSs do not involve C_{LOW}P. Second, SFPs are analyzed as heads in the head-final structure as in (40). Nonetheless, for the reason that does not really concern the proposed analysis, I adopt Kayne's (1994) view that languages are head-initial and only leftward movement is allowed.

(41) The modified version of Paul's system in (40).

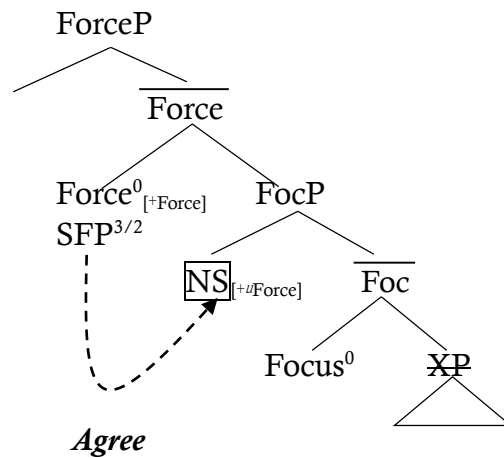


As pointed out in Section 1, a Mandarin NS can be regarded as a truncated syntactic

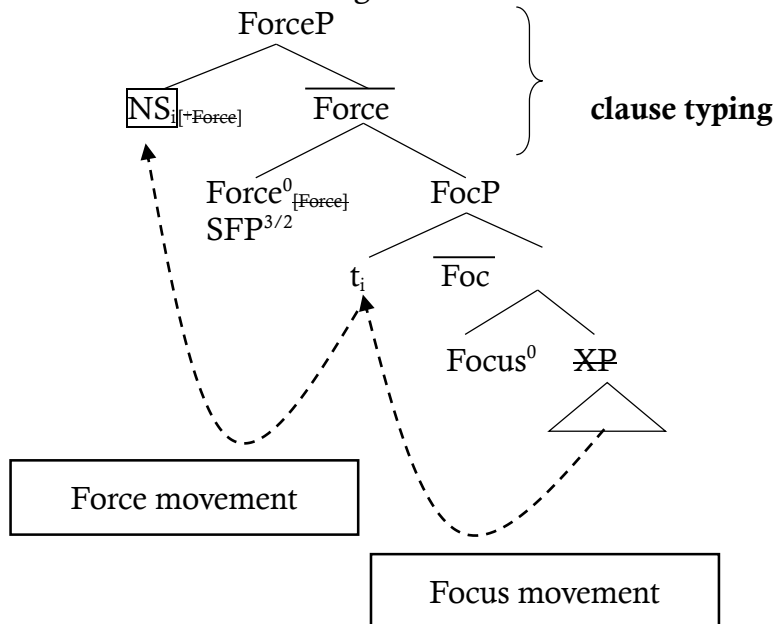
structure, and it minimally consists of ForceP and FocP. In this light, I argue for the overt lowest part of the hidden structure of Mandarin NSs as depicted in (42). Words of explanation are as follows. I assume that Force⁰ has a clause typing feature (Rizzi 2006) and is a legitimate Probe that probes a Goal in its c-command domain to establish a Agree relation, as represented in (42)a. The NS undergoes obligatory internal merge to satisfy the force feature on Force⁰.

(42) The proposed analysis of Mandarin NSs (Ver. 2)

a. The Probe (Force⁰) Agrees with a matching Goal



b. The NS undergoes internal merge to [Spec, ForceP], and the force feature on the NS is checked off against Force⁰



The proposed analysis of the lower syntactic structure of NSs in (42) can only be motivated to explain the fact that NSs can be accompanied by SFPs and encode clause

typing information. In the section to come, I will argue that discourse particles and the vocative phrase constitute another layer, the speech act layer, dominating ForceP in (42) and responsible for the speech act.

4.3 Discourse particles and the vocative phrase: SA⁰-to-sa^{0*} movement¹¹¹

In this section, I argue that the multiple functions of three discourse particles summarized in (9), repeated in (43), reflect the syntax-discourse import from sa*P and SAP respectively.

(43) Functions of *eh*², *oh* and *xu*²

| | Discourse functions | Cognitive functions |
|------------------------|--|--|
| <i>eh</i> ² | attention making, surprise marking and interrogation initiating | discovery, counter-expectation, wonder, |
| <i>oh</i> | recipience of the interlocutor's information and speaker's reasoning/understanding process | impatient, indifference, unhappiness |
| <i>xu</i> ² | attention capturing | warning of current situations that should be made not public in the immediate context. |

Recall from Section 3.2 that the Romanian discourse particle *hai* is interpreted differently according to its position with respect to the vocative phrase in (22), repeated in (44). Haegeman and Hill (2013) propose that *hai* in (44)b undergoes head movement from SAP to sa*P, as instantiated in (45). As illustrated in (45), the interpretative import of *hai* is readily explained: *hai* acquires the speaker's feeling in sa*⁰ whose domain is associated with SPEAKER, while it has the attention capturing action that is intended to be performed upon the hearer/addressee in SA⁰ whose domain is associated with HEARER/ADDRESSEE, which can be syntactically realized as the vocative in [Spec, SAP].

¹¹¹ A caveat to be issued is that I do not investigate the internal structure of the vocative phrase, as it does not directly bear on the syntactic structure of Mandarin NSs. The interested reader is referred to Hill (2013) and Espinal (2013) for detailed discussion regarding the internal makeup of the vocative.

(44) The discourse particle *hai* in Romanian

a. **Vocative > *hai* (⇒ attention-drawing)**

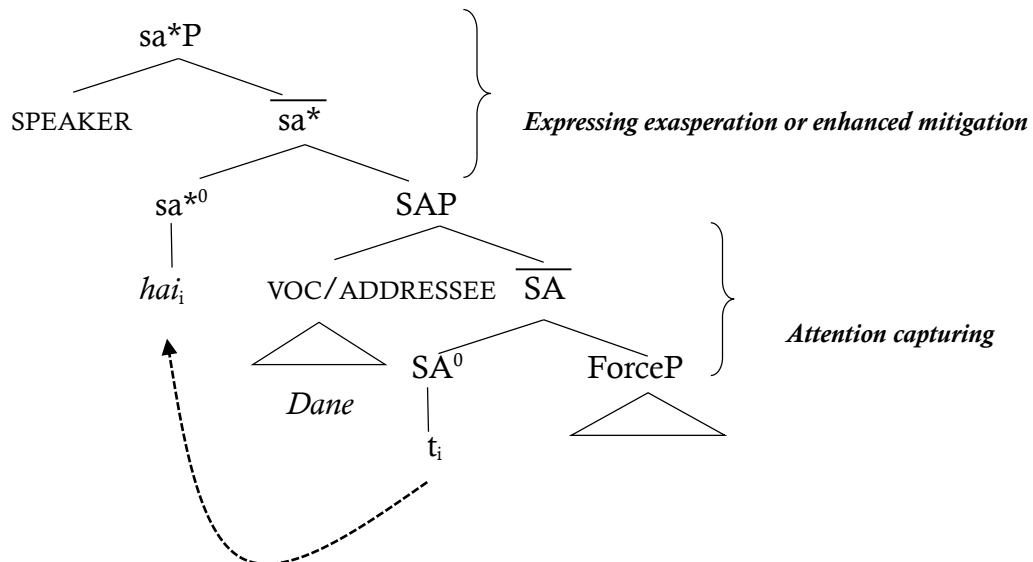
Vai Dane hai că nu te cred
 VAI Dan.VOC HAI that not you believe.1SG
 ‘Ah, Dan, C’c’mon, I don’t believe you.’

b. ***hai* > Vocative (⇒ expressing exasperation or enhanced mitigation)**

Vai, hai Dane că nu te cred
 VAI HAI Dan.VOC that not you believe.1SG
 ‘Ah, c’mon, Dan, I don’t believe you.’

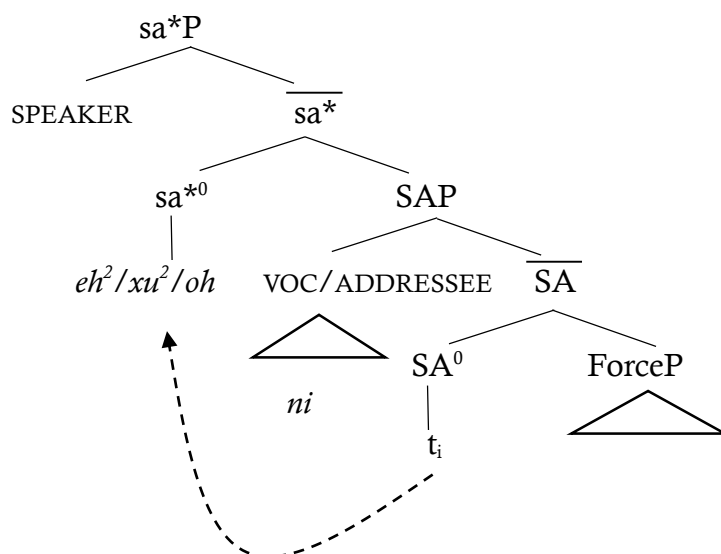
(Modified from Haegeman and Hill 2013, p.380, ex. 15a and 15c)

(45) The sa*P analysis of the Romanian discourse particle *hai*



It is obvious that the functions of *hai* can be ascribed to the syntax-discourse mapping process in (45). According to the sa*P analysis, the two functions in (43) can be interpreted as follows. The discourse function is related to the speaker’s intension of performing an action imposed on the hearer to capture his attention in the discourse, as the discourse participant ADDRESSEE is within the c-command domain of the discourse participant SPEAKER, which is the anchor of point of view. Along this line of reasoning, *eh*² is used by SPEAKER to capture ADDRESSEE’s attention and signal the initiation of interrogation imposed on ADDRESSEE. By contrast, the cognitive function of *eh*² is related to the discourse participant SPEAKER’s feeling toward the proposition, which is encoded by sa*P, the SPEAKER domain. This line of reasoning applies to *oh* and *xu*² summarized in (47).

(46) The sa*P analysis of the discourse particles in Mandarin



Following the line of reasoning pursued in [Haegeman and Hill \(2013\)](#), I argue that three discourse particles merge to SAP⁰ and undergoes head movement to sa⁰, as instantiated in (46). Given this sa*P analysis, I argue that (43), analyzed under (46), can be interpreted as (47). It is shown that the discourse functions described in the sense of [Hsu \(2016\)](#) pertain to the discursual action imposed on HEARER/ADDRESSEE performed by the SPEAKER, while the cognitive functions encode SPEAKER's point of view of UTTERANCE CONTENT (NS) because it serves the anchor of point of view.

(47) The syntax-discourse mapping of *eh²*, *oh* and *xu²*

| | SAP⁰: the SPEAKER intends to perform an <i>x</i> action such that it is able to exert discursual effects imposed on the HEARER/ADDRESSEE. | sa*P: the SPEAKER is the anchor of point of view of the utterance (NS) with his/her point of view encoded. |
|------------|---|---|
| <i>eh²</i> | attention-making, surprise-marking and interrogation-initiating | discovery, counter-expectation, wonder, |
| <i>oh</i> | signaling recipience of the information, signaling the speaker's reasoning/understanding process | impatience, indifference, unhappiness |
| <i>xu²</i> | Attention capturing | warning of current situations that should be made not public in the immediate context. |

According to the proposed analysis in (46), it is explained that the distinct discourse

functions of each discourse particle are incarnated by head-to-head movement from the HEARER/ADDRESS domain (SAP) to the SPEAKER domain (sa*P). I suggest that the sa*P analysis of discourse particles advanced here presents a more transparent syntax-discourse mapping relation. Similar to the Interrogative Flip, (narrow) syntax plays a role in motivating head movement of discourse particles in order to substantiate the discourse interpretative import parasitic on SAP and sa*P.

It is worth noting that the postulation of the speech act layer in (46) accounts for the following properties of NSs. First, it is noted that the vocative *ni* ‘you’ merges to [Spec, SAP], consistent with Haegeman and Hill’s (2013) analysis of vocatives in Romanian and WF. Second, SAP takes ForceP as its complement, as discussed in Section 3.1 that the speech act layer dominates ‘a sentential domain’ marked by Force⁰. This accounts for the fact that the presence of the vocative *ni* obligatorily entails the presence of SFPs, because SAP⁰, whose Spec position is occupied by the vocative phrase, takes ForceP as its complement. Third, the syntax-discourse properties of three discourse particles are elucidated in a more straightforward way. In Section 4.4, I will illustrate the hidden structure of NSs built on the discussion from Section 4.1 to Section 4.3.

4.4 The structure of nonsententials

To recapitulate, Mandarin NSs can be accompanied by a set of satellites, as instantiated in (48), and the vocative *ni* is allowed to occur in two positions. The exemplification of (48) is represented in (49). There is no apparent discourse/semantic difference between (49)a and (49)b. It appears to be the case that the vocative *ni* (49)a is prosodically parsed as a unit with the discourse particle.

(48) Two structures of Mandarin NSs

- a. discourse particle - VOC -/NS- SFP
- b. discourse particle-NS-SFP-VOC

(49) The vocative in the pre-NS position or the utterance-final position.

Context: The teacher talks to her student after attending his presentation...

- a. Eh² ni, / [henjingcai]_{NS} ou!
- D.PART you.VOC very impressive SFP₂

b. Eh², [henjingcai]_{NS} ou, ni!
 D.PART very impressive SFP₂ you.VOC
 ‘Very impressive, you!’

⇒ **The speaker initiates the conversation by attracting the hearer’s attention while expressing surprise.**

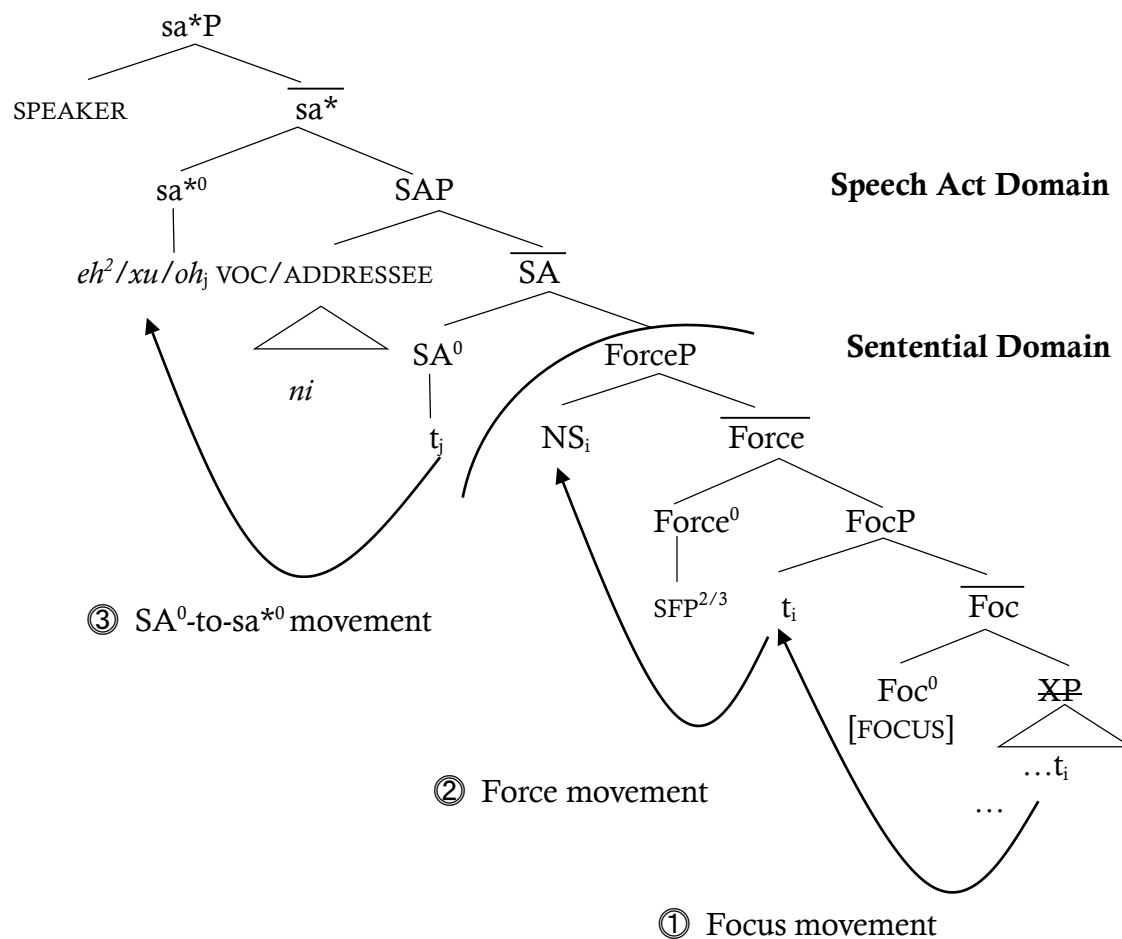
[Clause Type: Exclamative; Speech Act: Expressive]

Following the discussion from Section 4.1 to Section 4.3, I argue that Mandarin NSs have an articulated structure in (50). As illustrated in (50)a, the NS undergoes \bar{A} -(focus) movement [Spec, FocP] to check the [Focus]-feature and further to [Spec, ForceP] to check the force feature on Force⁰. The NS receives a clausal type in accordance with a SFP it takes. As the derivation unfolds, the speech act layer merges to ForceP. The discourse particles undergo head-to-head movement to encode SPEAKER’s intended action imposed on HEARER/ADDRESSEE (SAP), and SPEAKER’s point of view on the proposition (sa*P). In stark contrast, (50)b differs from (50)a in motivating the fronting of ForceP to [Spec, SAP]. I suggest that this fronting can be regarded as foregrounding in the sense that the NS moves to a position that makes itself stand out from the surrounding satellites. The similar foregrounding movement is also found in (18)b, where ForceP moves to [Spec, SAP] to obtain foregrounding effects. A word of clarification is that though it moves to a higher position, it is within the anchor domain the SPEAKER.

(50) The proposed derivation of Mandarin NSs (Final version)

a. The vocative in the pre-NS position (= (49)a)

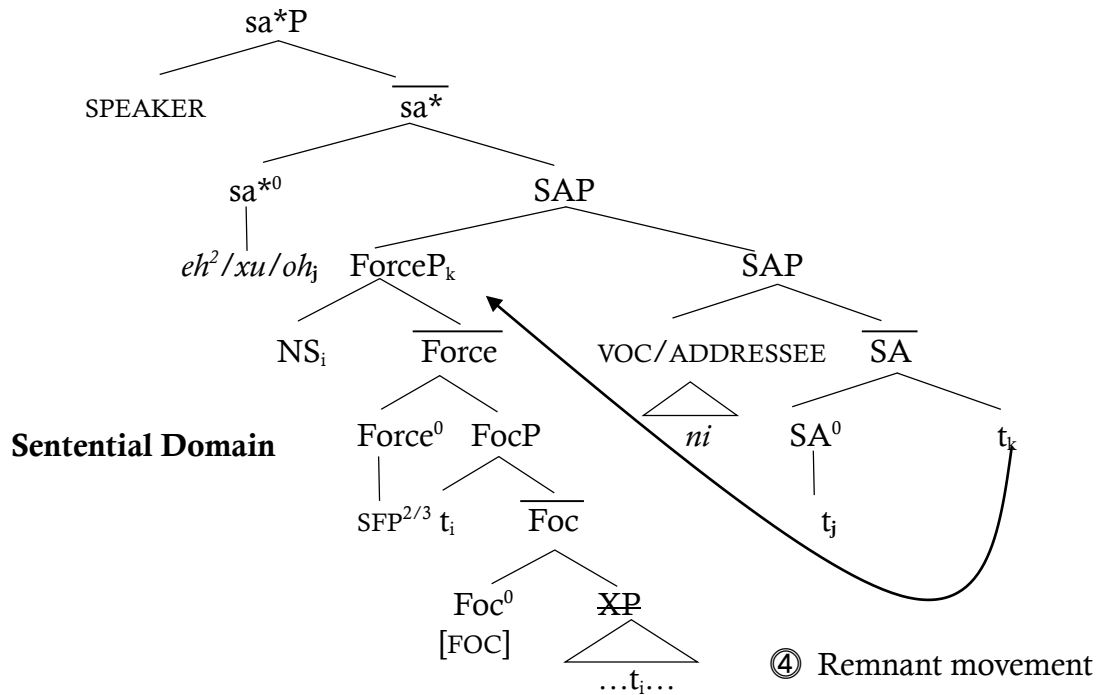
[DISCOURSE PARTICLE - VOC -/NS- SFP]



b. The vocative in the NS-final position (= (49)b)

[DISCOURSE PARTICLE-NS-SFP-VOC]

Speech Act Domain



In this section, I have shown the derivation of Mandarin NSs based on the discussion from Section 4.1 to Section 4.4. It appears to be the case that the articulated structure of NSs is seemingly truncated from ForceP, which Rizzi (2006) argues is the unmarked functional projection, to the speech act layer consisting of SAP and sa*P. Such truncated structure is able to syntactically substantiate the SPEAKER-HEARER/ADDRESSEE relation, clause typing information and even focus.

5. Conclusion

In this section, I argued for a sa*P analysis of Mandarin NSs in line with Haegeman and Hill's (2013) proposed version of the speech act layer, and claimed that each interpretative component of Mandarin NSs, including illocutionary force, clause typing information, and the vocative, corresponds to a series of functional projections in the CP periphery, merged as a truncated structure as illustrated in (50). Following the line of pursuit in this dissertation, I argue that the numeration is the level in which the [Focus]-feature is assigned to NSs, but other discourse particles have to be substantiated by higher functional projections in the speech act layer. It follows that there is a division of labor

between the numeration and syntax with respect to how they interface with discourse. For concreteness, the speech act layer serves an interface involving the immediate context, which in turn involve the speaker and the hearer. The licensing condition of these two discourse roles has to be externalized in some way to the computation system because it is acutely sensitive to the universality of discourse, which cannot be dictated by the computation system. In spite of the nature of externalization, the speech act layer, as part of the computation system, serves as a means of the interface between syntax (the computation system in a broad sense) and discourse. Focus, by contrast, pertains to the truth condition and is independent of the immediate context. Thus, as a formal feature, focus can be assigned in the numeration, different from discourse properties, which I argue have to be clausally substantiated by the speech act layer.

In addition, I suggest that there are three merits of the proposed analysis of Mandarin NSs. First, it has been claimed in the literature that NSs are endowed with root-like properties in the way that NSs cannot be located in the embedded clause and are able to carry illocutionary force by nature (assertoric force (Stainton 2004)). De Cat (2012), for instance, indicates that NSs in French, like (51), disallow MCP. This is because they are non-clausal. She further argues that NSs are truncated structures with root properties in a radical extension of Rizzi's (2005:533) account of grammatical ellipsis, according to which languages are allowed to truncate CP at different levels to permit different kinds of root categories, in addition to the unmarked ForceP. De Cat (2013) maintains that NSs pertain to SPEAKER involvement because they are often endowed with illocutionary force and clause typing information in the specific context.

(51) French NS

Deux pattes, le canard?

two legs the duck

'The duck (has) two legs' (recovered from the context)

Mandarin NSs present a good testing ground for De Cat's view on NSs in the sense that clause typing information is incarnated by SFPs, SPEAKER involvement as well as the SPEAKER-HEARER/ADDRESSEE RELATION is syntactically represented by the speech act layer, consisting of sa*P (the SPEAKER domain) and SAP (the HEARER domain). Besides, as discussed above, I suggest that the speech act layer is external to the computation system,

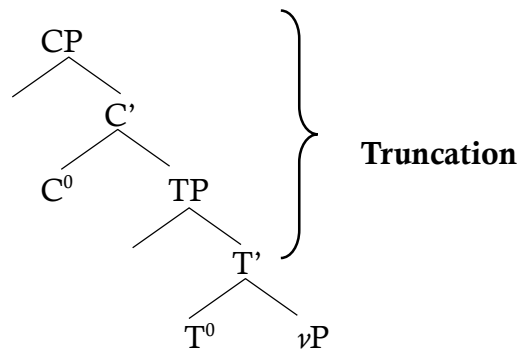
as it is acutely sensitive to the involvement of the speaker and the hearer in the immediate context.

Second, the proposed analysis of Mandarin NSs in (50) is successfully motivated to account for the complex interpretative components of NSs. Satellites surrounding NSs are C-elements and project as independent functional projections layered in the left periphery of CP, reflecting syntactic analyticity of Mandarin (Huang 2015). De Cat and Tsoulas (2006) propose that the relation between the nuclear (NS) and the satellite (dislocated topic) is mediated by a functional head whose interpretation is vague and context-dependent. They further add that the postulation of this extra head like *Act* has the merit of facilitating syntactic composition and allows a transparent syntax-semantic mapping without postulating an excessive amount of structure that is devoid of empirical evidence. *Act* contains an anaphoric feature and is specified for a force feature to account for the assertoric properties of NSs. *Act* also serves not only a syntactic and semantic glue between the nucleus and the satellites but also a head allowing the syntactic independence of NSs. Nevertheless, I think that De Cat and Tsoulas's proposal is neither empirically supported nor theoretically desirable in the sense that *Act* seems to be postulated to serve the purpose of capturing the properties of NSs. That is, its postulation is *ad hoc*. Rather, the proposed analysis in this chapter endorses the view that discourse properties can be clausally substantiated. The apparent occurrence of discourse particles, SFPs and the vocative in Mandarin NSs offer clues about the hidden structures of Mandarin NSs. This view meets the gist of the cartographic approach that assumes a transparent mapping between form and interpretation, and syntacticizes as much as possible the interpretative domains (Cinque and Rizzi 2010:64). Meanwhile, given the proposed analysis, I would be tempted to follow the wisdom of William of Occam, especially if it leads us toward a better account for learnability.

Third, the proposed analysis maintains that NSs have a fully-fledged clausal structure though most of it remains silent. This does not, I suggest, mean that Mandarin NSs have to be treated on independent grounds. Evidence from language acquisition sheds light on this issue. Rizzi (1993/1994) proposes the Truncation Hypothesis, stating that the child phrase structure can be smaller than that the adult phrase structure. As visualized in (52), the child phrase structure simply involves the truncated structure ranging from TP and CP. Keiko (2017) adds that Japanese-speaking children at the age of one are able to build up small structures devoid of tense and agreement with the default verbal form to express

‘imperative’. Under the cartographic view, the use of imperatives, as a form of illocutionary force, in speech suggests that ForceP is present in the child’s knowledge, though the low part of the clausal structure (TP and ν P) remains to be mature at the later stage. This observation is consistent with [De Cat and Tsoulas’s \(2006\)](#) study that French children at the age of approximately 1-2 utter NSs to express a variety of illocutionary force, as shown in (53).

(52) The truncated structure



(53) French children’s NSs

([De Cat and Tsoulas 2006](#), ex. 6-7)

a. Interrogative

Quoi, **ma gauche?**

(Lea 2;9.21)

what my left

‘What(’s the matter with) my left?’

b. Declarative

Méchant, la feuille.

(Tom 2;4.9)

nasty the leaf

‘The leaf (is) nasty.’

Crucially, the language acquisition studies suggest that children in the early stage are able to employ NSs to perform illocutionary force, though their structure is rather reduced, and interpreted under Rizzi’s Truncation Hypothesis, NSs in the child grammar reflect a truncated chunk out of CP but this does not mean the rest of clausal structure (TP and ν P) is missing. Rather, it is simply a matter of maturation, and children need to decide between the unmarked value and the marked value for each silent functional projection over the course of language acquisition.

6 Conclusion

The goal of this dissertation is to investigate whether discourse notions are visible in the syntactic computation by documenting two phenomena in Mandarin, Aboutness Topic (AT) and Nonsententials (NS). I have argued that there are two means to activate the syntax-discourse interface.

In the case of AT, it has been demonstrated that AT is endowed with a particular informational import that has to involve a topic and a F-constituent in two positions, surfacing as XP-split constructions widely discussed in German (Ott 2011; Van Hoof 2005). Along the lines of Fanselow and Cavar's (2002) Distributed Deletion analysis, I have argued that AT results from a series of feature-checking processes in which a XP, merged with a [Topic]-feature and a [+Focus]-feature respectively in the numeration, permits its sub-parts to be checked in corresponding positions and spelt out differently at PF. The feature-checking processes are made possible due to the articulated left-peripheral structure of CP/ ν P that allows the merge of TopP and FocP for feature-checking purposes. Interpreted along this line of thinking, the syntax-discourse interface can be achieved by merging lexical items with information structural features in the numeration that will be checked over the course of derivation.

By contrast, the case of NSs indicated that certain discourse notions, such as the involvement of the discourse roles SPEAKER and HEARER, cannot be treated as formal features, because they do not induce any interpretative effect and are acutely sensitive to the discourse. It seems that these discourse notions are externalized to the syntactic computation. Following the sa*P analysis (Speas 2003; Haegemen and Hill 2013; Haegemen 2014), I have argued that there is another supra-sentential layer, a speech act layer (sa*P and SAP), which dominates ForceP and can be activated to substantiate these

discourse notions. I argued that the syntax-discourse interface can be also activated by the merge of a speech act layer which is responsible of integrating the current proposition into the discourse where SPEAKER and HEARER/ADDRESSEE are involved.

Two implications arise from the proposed analysis of AT and NSs. First, discourse notions are active in the syntactic computation, adding support to the syntactic view that (i.) discourse notions (topic and focus) are encoded as formal features driving the syntactic computation, and (ii.) discourse notions (the discourse roles such as SPEAKER and HEARER/ADDRESSEE) can be syntactically substantiated by a supra-sentential layer (the speech act layer) to activate the syntax-discourse interface. Second, the two interface means are made possible because of the syntactic analyticity of Mandarin (Huang 2015; Tsai 2015a, 2015b) in the sense that concepts are not combined into single words, and, instead, they have corresponding positions distributed along the spine of clausal structure from ν P to CP. In the case of AT and NSs, topic, focus, and discourse notions have their dedicated functional projections in the left periphery of CP/ ν P, which suggests that these notions can be syntacticized by serving the interface between syntax and discourse. The major consequence of this dissertation is to show that the theory of discourse is closely tied to the architecture of grammar in general.

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