New perspectives on Chinese syntax

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Für Siegfried

Acknowledgements

Contents

Abbreviations

ATT	complementiser encoding the speaker/hearer's attitude (cf. chapter 7)
BA	head preceding the object in the *bǎ*-construction (cf. chapter 2)
C(-root)	complementiser in non-root contexts (cf. chapter 7)
CL	classifier
CLOW	low complementiser (cf. chapter 7)
DE	verb-adjacent head of secondary predicate indicating manner (cf. chapter 8)
DUR	durative aspect
EXP	experiential aspect
FORCE	complementiser indicating the sentence type (cf. chapter 7)
FUT	future
NEG	negation
PASS	passive
PERF	perfective aspect
PL	plural (e.g. 3PL = 3rd person plural)
PROGR	progressive aspect
SFP	sentence-final particle
SG	singular
SUB	subordinator
TOP	particle realizing the head of Topic Phrase (cf. chapter 6)

1 Introduction: What linguists have always wanted to know about Chinese…

1.1 Setting the stage

In the last thirty years, Chinese has played an increasingly important role in general linguistics, and has become a "must" for everyone interested in crosslinguistic comparison and syntactic theorizing. However, it is not always easy, especially for non-sinologists, to obtain comprehensive answers to their questions about statements encountered in the literature. There Chinese is often presented as an "exotic" language radically different from the Indo-European languages most linguists are familiar with. For example, does Mandarin Chinese, an isolating language, have the full array of parts of speech known from other languages or does it have instead an impoverished inventory lacking for example the categories adjective and adposition? Are there any discernible morphological processes? Is the word order of modern Mandarin 'verb object' or rather 'object verb'? What about Chinese as one of the standard examples of major word order change from OV to VO and back to OV? Does Chinese as a so-called *topic-prominent* language pay less attention to the subject? Is the topic always associated with given information? Which other items besides the topic can occur in the periphery above the core sentence? To what extent can the corresponding functional projections be accommodated by the *split CP* approach initiated by Rizzi (1997) and successfully applied to a number of different languages? What is the categorial status of the large array of sentence-final particles? Are they to be analysed as different types of complementisers, thus extending Thomas Hun-tak Lee's (1986) C-analysis of the yes/no-question particle *ma* to all sentence-final particles? Or should recent approaches such as Toivonen (2003) be adopted, whose basic claim is that particles do not "count" for grammar?

This book sets out to provide detailed answers to these and other questions. It places the issues at hand within the larger general linguistic context of current theories, points out the (often implausible) ramifications of preconceived ideas prevalent in the literature and offers precise syntactic analyses. A large array of representative data is provided in order to enable the reader to judge for herself/himself the competing viewpoints, which were often based on more limited data sets. Though the chapters are presented in a carefully chosen order,

each chapter is self-contained and can be read separately. This inevitably leads to some repetitions, for which I ask indulgence from those readers who faithfully follow the pre-established order.

While the focus is on Modern Mandarin, the book occasionally refers to earlier stages of Chinese. This is done in order to offer additional arguments lending further support and plausibility to a given synchronic analysis, or else in order to highlight certain striking continuities in the history of Chinese syntax. VO order is one such constant factor. Since the earliest attested documents from the pre-Archaic Chinese period, i.e. 13th – 11th c. BC, up to today, Chinese has always been VO (cf. Djamouri 1988; 2001; Shen Pei 1992). This directly challenges Li and Thompson's (1974a: 208) scenario – still widely accepted in the specialist and non-specialist literature – that pre-Archaic Chinese (prior to 11th c. BC) was an SOV language, which changed to SVO between the 10th and the 3rd c. BC before starting to shift back to SOV, a change purported to be still incomplete in Modern Mandarin.

Turning to the place of Chinese in typology, Chinese is best known for being a recurrent exception to quite a number of typological generalizations. The generalizations at stake concern *cross-categorial harmony*, that is, the observation that in many languages the order between a head and its complement is the same across different categories. For example, VO languages often have prepositions and OV languages postpositions, where the relative order between the adposition and its complement is said to reflect the relative order between the verb and its object. Note that in this type of word order typology, "order" always refers to surface order. The term *cross-categorial harmony* itself already indicates the built-in bias, *viz.* the expectation for languages to be "harmonic", assigning an "outlier" status to "disharmonic" languages. In other words, cross-categorial harmony – starting out as a basically statistical observation in Greenberg (1963) ("almost always", "with overwhelmingly more than chance frequency" etc.) – has become an "ideal state" which languages are supposed to seek. As a consequence, cross-categorial harmony has acquired the status of one of the driving forces for change, insofar as a change from a disharmonic situation into a harmonic one is presented as being "motivated" by the "natural" tendency of languages towards "harmony", with the implicit assumption that disharmonic situations are unstable *per se*. Likewise, cross-categorial harmony often plays the role of an evaluation metric for competing synchronic analyses, so that in general the "harmonic" alternative will be chosen over the "disharmonic" one.

The concept of cross-categorial harmony has considerably gained in importance since Greenberg (1963). Unfortunately, this importance is proportional to the number of misconceptions associated with it, some of which are addressed

in Newmeyer (2005) and Whitman (2008) (cf. chapter 8 below for further discussion). Adopting their point of view that typological generalizations are not part of the grammar to be acquired by a child learner, this book shows how Chinese can further contribute to a clarification of these issues and help to "deconstruct" cross-categorial harmony as a principle of grammar. Chinese with its attested history of more than three thousand years is also useful to test the role cross-categorial harmony is supposed to play in language change.

1.2 Organization of the book

As we have seen above, word order in modern Mandarin as well as earlier stages of Chinese has remained until recently under debate. Chapter 2 therefore begins by settling this issue. It examines in detail the word order observed in the earliest attested texts from the Pre-Archaic Chinese period (13th–11th c. BC), which is mainly VO. By contrast, OV order is confined to two types of structures during this period, i.e. object focus clefts and negated sentences with a pronominal object. A wealth of attestations indicates that Chinese has kept VO as its main word order for all of its history until today, thus leaving no room for the major word order changes 'OV > VO > OV' postulated by Li and Thompson (1974a). A detailed analysis indicates that modern Mandarin displays VO order, too. The very construction presented by Li and Thompson (1974a) as evidence for their claim of modern Mandarin as an SOV language, i.e. the *bǎ* construction, upon careful analysis turns out to involve head-complement order in accordance with VO.

The hypothesis of a possibly impoverished array of lexical categories as a characteristic of isolating languages is addressed in chapters three, four, and five, which examine prepositions, postpositions and adjectives, respectively. Chinese is shown to have as rich an inventory of categories as inflected languages, thus lending support to Baker (2003) who likewise challenges the "prejudice" often encountered in the literature that isolating languages lack some of the categories postulated for inflected languages. This is important insofar as this preconceived idea is still alive, both in the functional and formal literature. For example, to assign a "hybrid", "dual categorial" status to prepositions (with the result that they are classified as verb and preposition at the same time) is more easily done in isolating languages where the co-existing verb and preposition are formally alike. As argued for at great length in chapter three, however, this non-distinctness is only superficial in nature. It does not bear up under further scrutiny in the form of standard tests distinguishing

prepositions and verbs, such as (in)compatibility with negation and aspect and the ban on stranding observed for prepositions.

In parallel to chapter three, chapter four demonstrates that postpositions and nouns belong to different categories. This is another case where the literature often posits an indeterminate nature instead of a clear adpositional status. The "undesirability" of having another adpositional category besides prepositions, which in addition is disharmonic with the VO order, has certainly played a role in the reluctance to admit the category of postpositions, notwithstanding the well-known co-occurrence of prepositions and postpositions in many other languages such as German. In any case, there is no alternative but to acknowledge the existence of both prepositions and postpositions when confronted with circumpositional phrases, i.e. complex adpositional phrases containing both a preposition and a postposition 'preposition NP postposition' as in *cóng míngtiān qǐ* 'from tomorrow on' (also cf. German *von morgen an*). The comparison with other languages, in particular German, again proves to be helpful, because the same hierarchy 'Path over Place' observed here also holds for Chinese, even though the way this hierarchy is implemented differs.

Last, but not least, chapter five on adjectives adduces extensive evidence in favour of adjectives as a part of speech separate from stative verbs, again invalidating the impoverished inventory of categories scenario often invoked for isolating languages. Furthermore, it argues for a second class of adjectives, *derived adjectives*. As their name suggests, *derived adjectives* result from a morphological process such as (complete or partial) reduplication. In other words, while isolating languages – by definition – lack inflectional morphology, this clearly does not entail the absence of derivational morphology.

Chapters six and seven turn to the analysis of the syntax and semantics of the peripherpy above the core sentence. Naturally, the main issue to be examined first is the so-called *topic prominence* of Chinese. Chapter six takes up and challenges some of the ideas associated with this notion, such as the alleged reduced importance of the subject. It also demonstrates that the topic is not always "what the sentence is about" and does not exclusively convey given information. Furthermore, adopting the assumption from Rizzi's (1997) *split CP* approach that the sentence-external periphery is mirrored by a sentence-internal one, chapter six also argues for the existence of a sentence-internal topic position below the subject, hosting *inter alia* the so-called *preposed object*. Given that the preposed object is often (mis)analysed as an instance of focus, chapter six also addresses the difficult issue of how to distinguish topic and focus in the sentence periphery.

Chapter seven examines the large array of sentence-final particles (SFP) in Chinese. These particles are shown to instantiate different types of complemen-

tisers, i.e. functional heads selecting a sentential complement. This might at first sight look implausible, because initially the term *complementiser* was reserved for items such as *that* and *if* in English, which head subordinate clauses. It makes sense, however, within Rizzi's (1997) *split CP* where the sentence periphery is shown to consist of different layers of C, both in subordinate and matrix sentences. Importantly, Chinese SFP display a strong root vs non-root asymmetry, the large majority of SFP being confined to matrix contexts, with only a few SFP occurring in embedded contexts. Again, this analysis of SFP as complementisers is not uncontroversial. It goes against the widespread assumption that VO languages exclude such a head-final CP, complementisers being claimed to be verb patterners (cf. Dryer 1992, 2009). Chinese is thus clearly "misbehaving" and once more challenges the general validity of cross-categorial correlations set up in typological studies.

Chapter eight concludes the book by closely examining the influential role the concept of cross-categorial harmony has played as a heuristic device for choosing between alternative synchronic analyses and in the setting up of typological data bases. Against the backdrop of the analyses presented in this book, there is no choice but to admit that Chinese is indeed as "mixed" and "disharmonic" as it appears to be, combining VO order, head-final NP, head-final CP, and mixed adpositions (prepositions and postpositions). Given that numerous other languages display mixed categories (e.g. prepositions and postpositions in Germanic languages) and disharmonic orders (e.g. VO order and mixed adpositions in the Niger-Congo language Mande, cf. Claudi 1994: 195), the validity of cross-categorial generalizations underlying the concept of harmony is challenged. This lends further support to Newmeyer (2005) and Whitman (2008) who defend the view that cross-categorial generalizations, formally captured by the *Head parameter* in the generative framework, do not, in fact, constitute grammatical constraints. A child has no access to knowledge based on crosslinguistic comparison; hence this knowledge cannot be part of the synchronic grammar a child has to learn. Finally, the stability over time observed for the *dis*harmonic states in Chinese (such as the combination of VO order with a head-final NP attested since the earliest documents dating from the 13th c. B.C.) clearly challenges the causal relation between disharmony and unstable state often posited in the literature, where languages are assumed to change in order to "remedy" their disharmonic states and to become more harmonic.

2 SVO forever!*

When Chinese word order is cited in the general linguistics literature, it is either as an illustration of drastic changes in word order or as an exception to otherwise widely observed cross-categorial generalizations such as the combination of VO word order with a head-final NP. While the role of Chinese in typology is examined in detail in chapter 8, the present chapter addresses the issue of word order and both recapitulates and corrects some of the major current misconceptions. Following the general practice of word order typology, "order" is used in the sense of *surface* order here unless indicated otherwise. Chinese is shown to have always displayed VO order, throughout its attested history of more than three thousand years up to the present day, thus invalidating the still widespread view of Chinese – due to Li and Thompson (1974a) – as the prototype of a language having undergone major word order changes.

   Section 2.1 presents relevant data from the earliest attested documents, i.e. the *Shang inscriptions* (pre-Archaic Chinese, 13th c.-11th c. BC). This corpus dating from the Shang dynasty consists of approximately 150,000 fragments carved on ox bones and tortoise shells among which more than 26,000 complete sentences can be identified. The Shang inscriptions are also often referred to as *oracle bone inscriptions* (OBI). Following Djamouri (1988), the term *Shang inscriptions* is used here in order to avoid any misunderstanding with respect to the nature of this corpus. As will become evident from the examples provided, the Shang inscriptions consist of full-fledged sentences and do not represent some obscure formulaic language. Note that Chinese is a language whose syntax is recoverable at an earlier stage than its phonology, given that the document used to reconstruct the phonology of so-called *Old Chinese* (cf. Baxter 1992, Sagart 1999: 4; Baxter and Sagart 2014), the *Shi Jing* 'Book of Odes', dates from several centuries later (approximately 8th c. – 6th c. BC). Section 2.2 turns to Modern Mandarin and investigates the architecture of its extended verbal projection, which shows consistent head-complement order. This also holds for the projection headed by *bǎ*. In other words, the sequence 'S *bǎ* NP V' does *not* instantiate OV order, as proposed by Li and Thompson (1974a) and widely adopted in the literature, but instead illustrates head – complement order in accordance with VO. Section 2.3 finally considers some possible reasons why Li

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and Thompson's (1974a) scenario for word order changes in Chinese was so readily accepted and concludes the chapter.

2.1 Word order in Pre-Archaic Chinese (13th c. – 11th c. BC)

According to Li and Thompson (1974a: 208), the history of Chinese has evolved in three steps: Pre-Archaic Chinese started out as an SOV language, it changed to SVO between the 10th and the 3rd c. BC, and then started to shift back to SOV, a change purported to be still incomplete in Modern Mandarin. Importantly, Li and Thompson did not take into account at all the available rich text corpus for pre-Archaic Chinese, i.e. the Shang inscriptions. Nevertheless, their unfounded speculation became a "robust fact" by simply being repeated over and over in the literature, without anybody ever attempting to check their claim and to actually examine the relevant data.[1] This is all the more surprising as Chinese specialists of pre-Archaic Chinese (cf. Chen Mengjia 1956: 133; Guan Xiechu 1953 among others) had already noted VO order for pre-Archaic Chinese. VO as main word word order is also confirmed by the in-depth study of the syntax of pre-Archaic Chinese in Djamouri (1988). More precisely, he demonstrates that there are only two clearly definable structural contexts that allow for (surface) OV order and provides additional statistical evidence: among the 26,000 complete sentences in the Shang corpus 94% have SVO order, and only 6% SOV (also cf. Shen Pei 1992: 224 among others; for SOV order, cf. section 2.1.2). Let us now have a closer look at the results of Djamouri (1988) and subsequent research.

2.1.1 VO order in Pre-Archaic Chinese

First, in pre-Archaic Chinese, argument(s) subcategorized for by the verb occupy the postverbal position. This holds both for argument NPs (cf. [1] and [2]) and argument PPs (cf. [3], [6], [7]). Accordingly, both the direct and the indirect object follow the verb in the double object construction, where the indirect object (the goal argument) can either be an NP (cf. [4], [5a]) or a PP (cf. [5b]).

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1 Light (1979) is a notable exception. He emphasizes the mixed nature of Chinese both in present and earlier stages (though not going further back than the 5th c. BC himself) where VO order co-exists with a systematically head-final NP, typically associated with OV order, and calls for a more cautious approach to the interpretation of these data.

(1)　　王伐舌方
　　　　Wáng fá [*NP gōng fāng*][2]　(*Heji* 6223*)*
　　　　king fight　Gong tribe
　　　　'The king will fight the Gong tribe.'

(2)　　[...]王豐 麋
　　　　wáng jǐng mí　(*Heji* 10361*)*
　　　　king trap elk
　　　　'The king will trap elks.'

(3)　　王往于田　　　　(*Heji* 00635 recto*)*
　　　　Wáng wǎng [*PP yú tián]*
　　　　king go　　　to field
　　　　'The king will go to the fields.'

(4)　　帝受我年
　　　　Dì shòu [*IO wǒ] [DO nián]*.　(*Heji* 09731 recto*)*
　　　　Di give　1PL　harvest
　　　　'[The ancestor] Di will give us a harvest.'

(5)　　a.　出 祖乙三宰　　(*Heji* 01610*)*
　　　　　　Yòu　　zǔyǐ sān láo
　　　　　　present Zuyi 3　penned.sheep
　　　　　　'One will present (as sacrifice) three penned sheep to Zuyi.'

　　　　b.　出 于祖乙一牛　　(*Heji* 06945*)*
　　　　　　Yòu　 [PP yú zǔyǐ][NP yī niú]
　　　　　　present　to Zuyi　1 ox
　　　　　　'One will present (as sacrifice) an ox to [the ancestor] Zuyi.'

(6)　　子商亡斷在囚　　　　(*Heji* 02940)
　　　　Zǐ　　shāng wáng duàn [PP zài huò]
　　　　prince Shang NEG　end　in misfortune
　　　　 'The prince Shang will not end in misfortune.'

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2 Following current practice in the literature, the term NP is used here not only for simple noun phrases such as *shū* 'book', but as a cover term for nominal projections in general, i.e. proper names (*Lǐsì*), modified NPs (*Lǐsì de shū* 'Lisi's book, *hěn guì de shū* 'very expensive books'), and quantified NPs (*hěn duō shū* 'many books', *sān běn shū* '3 CL book' = three books).

(7)　我乎往于西　　　(*Heji* 10050*)*
　　Wǒ hū　　[wǎng [PP   yú xī]]
　　1PL order go　　　 to west
　　'We will order to go west.'

Example (7) is a nice illustration of the pervasive head-complement order in the VP to be expected in a VO language: the matrix verb *hū* 'to order' takes its clausal complement to its right, and the argument PP of the verb in this complement clause is again in postverbal position.

　　Second, equative constructions involving a copula have the form 'A copula B', another characteristic of VO languages:

(8)　娩唯女
　　Miǎn　　wéi nǚ　　　　(*Heji* 6948 recto)
　　childbirth be　girl
　　'The childbirth is a girl.' (Djamouri 2001: 151, [14])

　　Third, negation and auxiliaries precede the verb, i.e. these heads take their verbal complement to the right, again in accordance with the head-complement order of a VO language. This holds for all types of verbs, including the copula *wéi* 'be' (cf. [9], [10]):

(9)　雨不唯 囜
　　Yǔ　　bù　wéi huò　　(*Heji* 12891)
　　rain　NEG be　misfortune
　　'[This] rain is not harmful.'

(10)　生十月雨其隹霝　　　(*Heji* 12628*)*
　　Shēng　shí-yuè　　yǔ　　　　 qí　wéi líng
　　beginning 10-month　precipitation FUT be　hail
　　'At the beginning of the tenth month, the precipitation will be hail.'

(11)　黄尹弗害王　　　　(*Heji* 6946 recto)
　　Huángyǐn fù　tuō　　wáng
　　Huangyin NEG harm　king
　　'[The ancestor] Huangyin does not harm the king.'

(12)　王其擁羌
　　Wáng　qí　yòng　　　　 qiāng　　　(*Heji* 26955)
　　king　　FUT use.in.sacrifice Qiang

'The king will use in sacrifice [some] Qiang tribesmen.'

Fourth, non-phrasal adverbs such as *yǔn* 'indeed' and *yì* 'also' occur in preverbal position to the right of the subject:

(13) 五月癸巳雨乙巳亦雨   (*Heji* 20943*)*
      *[Wǔ-yuè   guǐsì] yǔ,   yǐsì yì [*vP* yǔ]*
       5 -month Guisi rain Yisi also   rain
      'On the day Guisi of the fifth month, it rained;
       on the day Yisi, it also rained.

(14) 虫伐于黃尹亦虫于蔑   (*Heji* 00970)
      *Yòu fá   yú Huángyǐn yì [*vP* yòu   yú Miè]*
      offer victim to Huangyin   also   offer to Mie
      'We will offer victims (as sacrifice) to Huangyin, and also to Mie.'

(15) a. 壬辰允不雨風   (*Heji* 12921 verso*)*
          *Rénchén yǔn [*NegP* bù [*vP* yǔ]], fēng*
          Renchen indeed NEG   rain blow
          'On the Renchen day, indeed it did not rain, but the wind blew.'

      b. 方允其來于沚   (*Heji* 6728)
          *Fāng yǔn   qí lái [*PP* yú zhǐ]]*
          Fang effectively FUT come   to Zhi
          'Fang will effectively come to Zhi.'

As illustrated in (15a) and (15b), adverbs occur to the left of the extended verbal projection, hence precede negation and auxiliaries.

Fifth, phrasal adjuncts (PPs and NPs) in pre-Archaic Chinese can appear in three positions: preceding the subject, between the subject and the verb or postverbally (after the object when present). This again is the expected situation for a VO language, as witnessed by the 'V O adjunct-XP' order in a VO language such as English: *He met Mary last week/ on Tuesday*. Note, though, that the non-phrasal adverbs just discussed (*yì* 'also', *yǔn* 'indeed') are confined to the preverbal position below the subject and excluded from postverbal and pre-subject position. (As a matter of fact, this type of adverb has never been attested in postverbal position throughout the history of Chinese.)

Let us first examine adjunct PPs (cf. [16], [17]) and adjunct NPs (cf. [18]) in the sentence-initial position to the left of the subject, giving rise to the structure '[adjunct PP/NP] S V (O)'.

(16) 于辛巳王圍召方   (*Heji* 33023)
    [~PP~ *Yú xīnsì*] *wáng wéi   shào fāng*
        at Xinsi king   surround Shao tribe
    'On the Xinsi day, the king will surround the Shao tribe.'

(17) 在 𡆥 王其先遘捍   (*Ying* 593)
    [~PP~ *Zài nǔ*] *wáng qí xiān   gòu hàn*
        at Nü   king FUT advance meet opposition
    'At Nü, the king will advance and meet an armed opposition.'

(18) 今六月王入于商   (*Heji* 7775)
    [~NP~ *Jīn   liù-yuè*] *wáng rù   yú shāng*
        present 6 -month king   enter in Shang
    'This sixth month, the king will enter the Shang city.'

In the structure 'S [adjunct PP/NP] V (O)', where adjunct phrases appear in preverbal position, multiple adjuncts are possible (cf. [19]).

(19) 王在十二月在襄卜   (*Heji* 24237)
    Wáng [~vP~[~PP~ *zài shí'èr-yuè*] [~vP~[~PP~ *zài xiāng*] [~vP~ *bǔ*]]]
    king   at 12   -month   at Xiang   divine
    'The king in the twelfth month at the place Xiang made the divination.'

(20) 王今丁巳出   (*Heji* 07942)
    Wáng [~NP~ *jīn   dīngsì*]   *chū*
    king   present Dingsi.day go.out
    'The king on this Dingsi day goes out.'

(21) 王自余入   (*Heji* 3458)
    Wáng [~PP~ *zì   yú*] *rù*
    king   from Yu enter
    'The king will enter from Yu.'

Finally, adjunct phrases can also occur in postverbal position (after the object, if present). Note that in this structure, 'S V (O) [adjunct PP/NP]', only one adjunct is observed.

(22) 乞令吳以多馬亞省在南   (*Heji* 564 recto)
    Qì lìng   wú yǐ   duō   mǎyǎ   [~vP~ *xǐng* [~PP~ *zài nán*]]
    Qi order Wu lead numerous military.officer   inspect   at   south

'Officer Qi will order Wu to lead the numerous military officers
to carry out an inspection in the south.'

(23) 王入今月　　　(*Heji* 20038)
Wáng [*vP* rù [*NP* jīn　　yuè]
king　　enter　　present month
'The king will enter [the city] this month.'

(24) 㞷于河來辛酉　　　(*Tun* 1119)
Yòu　　yú hé [*NP* laí　　xīnyǒu]
present to He　　next Xinyou.day
'[We will] present a sacrifice to [the divinity] He on the next Xinyou day.'

(25) 多犬网鹿于㲼　　　(*Heji* 10976 recto)
Hū　　duō　　quǎn　　[*vP* wǎng　lù [*PP* yú　nóng]]
order numerous dog.officer　　net　　deer　at　Nong
'Call upon the many dog-officers to net deer at Nong.'

(22) and (25) involve adjunct PPs headed by *zài* 'at' and *yú* 'at, to', respectively. (22) is noteworthy insofar as it neatly illustrates pervasive head-complement order, where each embedding verb takes its clausal complement to its right. (23) and (24) illustrate temporal adjunct NPs in postverbal position.

The distribution of phrasal adjuncts in pre-Archaic Chinese, more precisely their postverbal position, can be captured by a Larsonian VP shell where the postverbal adjunct is a complement of the verb and hence included in the VP:

(25') VP　　　　　(cf. example [25]: *[...] wǎng lù yú nóng* 'net deer at Nong')
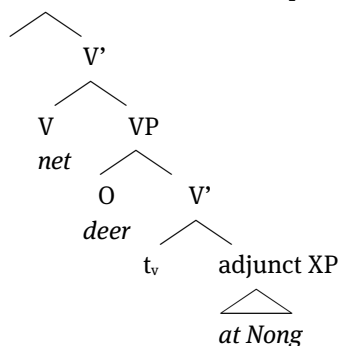
As illustrated in (25'), the verb first combines with the adjunct phrase, i.e. "adverbs are not the outermost adjuncts of V, but rather its innermost comple-

ments" (cf. Larson 1988: 345, footnote 11). This assumption is combined with the *Single complementation hypothesis* which states that a head allows only one complement. As a result, only a binary branching structure is possible and additional empty verbal heads are necessary to license both arguments and (postverbal) adjuncts, with the topmost empty V node hosting the raised lexical verb.

The possibility of exactly one adjunct phrase in postverbal position stated above indicates that pre-Archaic Chinese allowed selection of just one such VP shell (consisting of no more than two layers, one for the adjunct and one for the object) (cf. Djamouri, Paul, and Whitman 2013a). This contrasts with English where multiple adjuncts are allowed in postverbal position (cf. *She goes to Paris with her mother in winter during the sales at least every two years*) and where no upper limit on the number of empty verb nodes seems to exist. The acceptability of only one postverbal adjunct phrase in pre-Archaic Chinese excludes a right adjunction scenario à la Ernst (2002), which implies an unrestricted number of possible adjuncts.

Anticipating somewhat the discussion in section 2.2 below, phrasal and non-phrasal adjuncts in Modern Mandarin are completely banned from the postverbal position. In fact, this ban can be observed from approximately the 3rd c. AD onwards and indicates major changes in the format of the verbal projection, against the backdrop of constant VO word order. Djamouri, Paul, and Whitman (2013a) propose to explain this change by the loss of the Larsonian VP shell structure, as reflected in the impossibility for the verb to merge with a non-argument in Modern Mandarin. This property of Modern Mandarin raises problems for an implementation of the Larsonian VP-shell as proposed by Huang (1991, 1994) (cf. Paul [2000] for further discussion).

Finally, note that the distribution of phrasal adjuncts illustrated above highlights one of the shortcomings of cross-categorial correlations in typological surveys initiated by Greenberg (1963). Dryer (2003: 48–49) for example examines the position of PPs *per se* and establishes the combination of 'PP V' with OV order and of 'V PP' with VO order as expected "harmonic" correlations. As we have seen above, argument PPs indeed pattern with nominal objects, i.e. argument NPs, in following the verb; by contrast, adjunct PPs may either appear in pre- or postverbal position (where both positions are consistent with the head-initial nature of the VP in a VO language, as witnessed by English). Consequently, the argumental vs. non-argumental status of PPs needs to be taken into account. This is evident in (26): the argument PP *yú shāng* 'in(to) Shang' subcategorized for by the verb *rù* 'enter' must occupy the postverbal position and thus illustrates VO order, whereas the adjunct PP *yú qī yuè* 'in the seventh month' precedes the verb.

(26)　　王于七月入于商　　　(*Heji* 7780 recto)
　　　　Wáng [*vP* [*PP* *yú qī-yuè*] [*vP* *rù*　　 [*PP* *yú shāng*]]
　　　　king　　　　in 7-month　enter　　in Shang
　　　　'The king in the seventh month will enter the Shang city.'

Again a pure surface examination of the distribution of PPs fails here because there is no way to determine which PP is to be counted for establishing relevant word order correlations, the preverbal or the postverbal one.

　　To summarize this section, the rich corpus available for the earliest attested texts from pre-Archaic Chinese (13th c. – 11th c. BC) provides conclusive evidence for VO word order. Arguments subcategorized for by the verb (NPs, PPs and clausal complements) occur in postverbal position. Furthermore, negation and auxiliaries precede the verb, including the copula. Phrasal adjuncts can precede or follow the verb, with multiple adjuncts confined to the preverbal position. Accordingly, the extended verbal projection in pre-Archaic Chinese is head-initial. i.e. displays head-complement order throughout.

2.1.2 OV order in pre-Archaic Chinese

Let us now turn to the question of how to reconcile the claim just argued for at length, *viz.* that pre-Archaic Chinese was an SVO language, with the existence of SOV structures. The small percentage (6 %) of sentences displaying SOV order obtained by Djamouri (1988) indicates that SOV cannot be the default word order, but is allowed only under certain conditions. In fact, OV order is observed exclusively in two structures, one involving focalization of the object and one involving object pronouns in negated sentences (cf. Djamouri (1988). Going one step further, even these two cases of *surface* OV order can be shown to involve *underlying* head-complement configurations consistent with VO as main word order. Before turning to this analysis, it should be noted that the SOV structures to be examined here are not those referred to by Li and Thompson (1974a) as evidence for their claim. Only one of their two examples involves SOV order (cf. [31] below), i.e. a fronted interrogative object pronoun (*shéi* 'who(m)') and dates from around 5th c. BC, i.e. nearly a thousand years later than pre-Archaic Chinese.[3]

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3 The other sentence provided by Li and Thompson (1974a: 208; [28]) as an alleged example of SOV order in a declarative sentence does not bear further scrutiny, for it turns out to be incomplete, hence misparsed and not involving OV order at all. (i) is the example as cited by Li and

Returning to the *bona fide* surface SOV cases in pre-Archaic Chinese, I will limit myself to focalization of the object here. (For a detailed discussion of the structure 'Neg pronoun V', cf. Djamouri 2000, 2001 and references therein).

It is complete sets of predictions in the Shang inscriptions such as (27) and (28) that permit us to identify surface OV structures as clear cases of focalization. (27) presents a prediction in the form of a simple assertion displaying

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Thompson with their glosses and translation (*modulo* the Chinese characters added), (ii) is the complete sentence as retrieved from the original text (cf. Djamouri/Paul/Whitman 2012):

(i)　　　民獻有十夫予翼

　　　Mín　xiàn yǒu　shí　fū　　　　yú yì　　　　(Li and Thompson 1974a: 208; [28])

　　　people sage have ten persons I assist

　　　'Ten of the wise men among the people assisted me.'

(ii)　　　今翊日民獻有十夫；予翼以于敉寧武圖功 　(*Shu Jing* 書經·27·5, circa 8th c. BC)

　　　jīn　　yì　rì　mín　　xiàn　yǒu　shí　fū　；

　　　present next day people bestow have ten man

　　　yú yì　yǐ　yú mǐ　　níng wǔ tú　　　gōng

　　　1SG sustain lead to soothe settle Wu planned work

　　　'The day after, [among] the people ten men were sent;

　　　 I will support them and lead them to soothe and settle the work planned by Wu.'

As can be seen from the glosses and the translation, (ii) involves two coordinated sentences with *yú* 'I' as the subject of the second clause, the larger part of which is missing in Li and Thompson's rendering.

Following Li and Thompson (1974a), LaPolla (1994: 99) likewise interprets the OV order exclusively observed in precise grammatical contexts such as question or negation and dating from *later* periods than pre-Archaic Chinese as "remnants" of an "earlier" generalized verb-final order. His example (2) (p. 99) from the *Shū Jīng* (around 8th c. BC) is incomplete as well and accordingly misparsed and does not illustrate the intended order 'negation pronominal object verb', either (cf. Djamouri/Paul/Whitman 2012). (iii) provides the example as cited by La Polla (1994: 99) and allegedly illustrating the order 'S Neg O_pron V'. (Note that the non-matching glosses and translation are from LaPolla himself; the Chinese characters are added.)

(iii)　　　汝念哉, 無我殄。　　　　　　　　　(*Shu Jing* 書經 康誥 circa 8th c. BCE)

　　　Rǔ　niàn　　zāi wú　wǒ　tiǎn.

　　　2SG remember PRT NEG 1SG destroy [sic]

　　　'Remember, don't forget what I told you.' [sic]

However, when one goes back to the original text, it turns out that the complete sentence is as in (iv), i.e. the object 享 *xiǎng* 'dignity' of the verb 殄 *tiǎn* 'deprive' is missing in (iii). As a consequence, the sentence does *not* illustrate preverbal position of an object pronoun; on the contrary, *wǒ* 'I' is the subject of the following VP 'deprive of dignity':

(iv)　　　汝念哉, 無我殄享。

　　　Rǔ　niàn　　zāi,　wú　wǒ　tiǎn　　xiǎng.

　　　2SG remember PART NEG 1SG deprive dignity

　　　'Do you think of this, and do not make me deprive you of your dignity.'

　　　(Translation by Legge 1960 [1865], vol. 3, pp.397–398)

VO order. Against this background, two alternatives, (28a) and (28b), are proposed. In these alternatives, 'follow someone (in order to fight Xia Wei)' presents the presupposition, whereas the raised object NP of the verb *bǐ* 'follow', Wang Cheng, presents the focus:

(27) 王比望乘伐下危   (*Heji* 6476)
      Wáng bǐ   [NP *wàng chéng] fá   xià wēi*
      king   follow   Wang Cheng   fight Xia Wei
      'The king will follow Wang Cheng to fight Xia Wei.'

(28) a. 王勿唯望乘比   (*Heji* 6476)
          Wáng wù wéi [NP *wáng chéng] bǐ*
          king NEG be   Wang Cheng follow
          'It must not be Wang Cheng that the king will follow.'

      b. 王叀望乘比   (*Heji* 6476)
          Wáng huì   [NP *wáng chéng] bǐ*
          king   must:be   Wang Cheng follow
          'It must be Wang Cheng that the king will follow.'

In (28a), the focused constituent *Wáng Chéng* follows the negated matrix copula *wù wéi* 'NEG be' and the modal copula *huì* 'must be' in (28b).

   As argued for in Djamouri (1988, 2001), all of the attested examples where an argument NP or PP occupies a (surface) preverbal position involve focalization.[4] Importantly, the relevant focus pattern in pre-Archaic Chinese is restricted to a type of cleft construction, akin to modern Mandarin *shi...de* clefts (cf. Paul & Whitman 2008). The cleft structure is indicated in (29) and (30) with the same matrix copula elements *huì* 'must be' and *wù wéi* 'NEG be' as in (28). On the cleft analysis, the focalized constituent is not preverbal, but postverbal, for it occurs after the matrix copula. More precisely, the focalized constituent occupies the specifier position of the projection selected as complement by the copula (provisionally labeled ZP here, because its exact size still needs to be determined). This construction thus illustrates head – complement order, not complement – head order.

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4 It is by presenting the deities with several alternatives differing in the focalized item (including the alternation between a positive and a negative predicate as in [28]) that the oracle was achieved, *not* by asking questions. This is the reason why the huge corpus of the Shang inscriptions does not contain a single question, neither *yes/no* questions nor *wh*-questions.

(29) a. 王重 易白嫀比   *(Heji 6460 recto)*

        Wáng [ᵥₚ huì   [�z_P[ₙₚ yáng bó   shǐ]ᵢ [ᵥₚ bǐ   tᵢ]]]

        king   must.be   Yang lord Shi   follow

        'It must be Shi, lord of Yang, that the king will follow.'

      b. 王勿唯易白嫀 比   *(Heji 6460 recto)*

        Wáng [ₙₑₘₚ wù   [ᵥₚ wéi [z_P[ₙₚ yáng bó   shǐ]ᵢ [ᵥₚ bǐ   tᵢ]]]

        king   NEG   be   Yang lord Shi   follow

        'It must not be Shi, lord of Yang, that the king will follow.'

(30) a. 王勿唯龍方伐   *(Heji 6476)*

        Wáng [ₙₑₘₚ wù   [ᵥₚ wéi [z_P[ₙₚ lóng fāng]ᵢ [ᵥₚ fá   tᵢ]]]]

        king   NEG   be   Long tribe   fight

        'It must not be the Long tribe that the king will fight.'

      b. 王重龍方伐   *(Heji 6476)*

        Wáng [ᵥₚ huì   [z_P[ₙₚ long fāng]ᵢ [ᵥₚ fá   tᵢ]]]

        king   must.be   Long tribe   fight

        'It must be the Long tribe that the king will fight.'

To summarize, the preceding discussion has shown the importance of a precise syntactic analysis of the synchronic stage at hand. The surface 'OV' sequence in focalization structures 'S copula O V' turns out to involve underlying head-complement order precisely in accordance with the main VO word order.

      Concerning Li and Thompson's (1974a: 208 [27]) single example for SOV order, it dates from nearly a thousand years later and illustrates the well-known fronting of interrogative object pronouns in late Archaic Chinese (cf. Aldridge 2010 and references therein):

(31) a. 吾誰欺

        Wú shéi qī?   (Analects 9, 5th c. - 3rd c. BC;

        1SG who deceive   Li and Thompson 1974a: 208 [27])

        'Who do I deceive?'

      b. [ₜₚ Wú [ₜ' [ₜ° Ø] [ᵥₚ   shéi [ᵥₚ qī   tₛₕₑᵢ]]]]

         1SG   who   deceive

As argued for by Aldridge (2010), sentences such as (31a) involve *wh*-movement of *shéi* 'who(m)' to a position *below* the subject. The situation in late Archaic Chinese is thus different from that in English where *wh*-pronouns move to a

position in the sentence-periphery *above* the subject, i.e. Spec,CP, as witnessed by the translation of (31a): *[CP Who do [TP I deceive]?*. Importantly, however, in both languages *wh*-movement cannot be taken as an indication of OV order. On the contrary; given that *shéi* 'who(m)' occupies the specifier position of *v*P, which in turn is the complement of the higher head Tense (cf. [31b]), a *wh*-question such as (31a) where the *wh*-pronoun occurs in a surface preverbal position again instantiates underlying head – complement order in accordance with the main VO word order. [5]

2.1.3 Interim summary

The earliest attested documents from the pre-Archaic Chinese period (13th c.-11th c. BC) provide conclusive evidence for VO as main word order (cf. Chen Mengjia 1956, Djamouri 1988; 2001, Shen Pei 1992). This straigthforwardly invalidates Li and Thompson's (1974a: 208) hypothesis that pre-Archaic Chinese was an SOV language. Their speculation led to a pervasive misconception of Chinese as one of the prototypic examples of major word order change (OV to VO and then back to OV), still accepted in the specialist and non-specialist literature (cf. among others LaPolla 1994, Feng Shengli 1996, Lehmann 1995: 1121, Newmeyer 1998: 242).

   Note that Li and Thompson (1974a) base their speculative hypothesis on a single example dating from the 5th century BC, i.e. nearly a thousand years later than pre-Archaic Chinese; their example illustrates the well-known fronting of an object *wh*-pronoun to a sentence-internal preverbal position: 'Subject who(m) verb?' As mentioned above, this surface OV order observed in questions cannot serve as an argument for OV as the main order, in the same way that fronting of *wh*-pronouns in English questions is not taken as an indication of OV order, either. Turning back to pre-Archaic Chinese (13th c.-11th c. BC), given that its main word order was already VO, the alleged change to VO in the period between the 10th and the 3rd c. BC postulated by Li and Thompson (1974a) as the second step in the history of Chinese never took place. Nor did Chinese start shifting "back" to SOV after the third century BC. A random investigation of

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5 It is not clear to me why Aldridge does not posit an additional projection below TP and *above* *v*P in order to host the *wh*-pronoun; instead the wh pronoun *shéi* 'who(m)' is said to raise to Spec,*v*P. This is all the more surprising as *wh*-pronouns precede negation (cf. Aldridge 2010: 6), which in general is taken to indicate the left margin of the *v*P. In order to maintain the Spec,*v*P position as landing site for *wh*-pronouns in negated sentences, Aldrige (2010: 6; [10]) is forced to locate negation *below v*, a rather implausible move which is not further motivated.

data at different stages shows pervasive VO order throughout the attested history (cf. Djamouri, Paul, and Whitman 2013a). Importantly, Li and Thompson's (1974a) central assumption associated with this third step in the history of Chinese is likewise incorrect, namely the idea that this purported change to OV is still in progress in Modern Mandarin. This is discussed in the next section.

2.2 VO word order in Modern Mandarin

As observed by Li and Thompson (1974a: 206), Modern Mandarin displays quite a few VO characteristics, whence the claim of a "still ongoing" change: "The shift [to OV; WP] is obviously incomplete since Modern Mandarin still permits SVO word order in certain constructions. Such SVO sentences remain to be replaced by the SOV sentences that are already in existence or the SOV sentences that will be emerging." Putting aside the conceptual problems with this panchronic and teleological view of language change (cf. Hale 1998, 2007), the alleged OV status of Modern Mandarin has already been addressed and invalidated by numerous studies (cf. among others Light 1979, Huang Shuanfan 1978, Mei Kuang 1980, Sun and Givon 1985, Mulder and Sybesma 1992, Whitman and Paul 2005).

In the following, I offer a brief survey of the relevant data demonstrating VO order in Modern Mandarin and supplementing the arguments provided in the works just mentioned. I then carefully examine the cornerstone of Li and Thompson's OV hypothesis for Modern Mandarin, *viz.* the *bǎ* construction. The *bǎ* construction turns out to involve head-complement order consistent with VO. As a result, Li and Thompson's idea of Modern Mandarin as an OV language or a language "tending towards OV" is once again refuted, on the basis of the very construction put forward by them as their main piece of evidence for OV order.

2.2.1 The phrase structure of Modern Mandarin

Only arguments subcategorized for by the verb and "quasi" arguments depending on the verb's aktionsart, i.e. quantifier phrases indicating duration or frequency (cf. [33] and [34]) are admitted in postverbal position (cf. C.-T. James Huang 1982; Y.-H. Audrey Li 1985, 1990; Paul 1988; C.-C. Jane Tang 1990). Accordingly, in the double object construction, both the indirect object and the direct object follow the verb (cf. [35] and [36]).

(32) *Tā   dǎsǎo   fángzi*
      3SG sweep   room
      'She has cleaned the room.'

(33) *Tā yě   děng-le   [_{QP} bàn ge xiǎoshí]*
      3SG also wait-PERF   half CL hour
      'He also waited for half an hour.'

(34) *Tā yǐjīng   lái -le   [_{QP} wǔ cì] le⁶*
      3SG already come-PERF   5   time SFP
      'He has already come five times.'

(35) *Tā sòng -le   [_{NP} háizi] [_{NP} hěn duō   qián]*
      3SG give -PERF   child   very much money
      'He gave the child a lot of money (as a present).'

(36) *Wǒ mài-le   [_{NP} yī liàng qìchē] [_{PP} gěi tā]*
      1SG sell-PERF   1 CL   car   to   3SG
      'I sold him a car.'

Unlike arguments, adverbs and phrasal adjuncts are totally excluded from the postverbal position in modern Mandarin (in contrast to pre-Archaic Chinese) and have to precede the verb. (The so-called *descriptive complement*, often presented as a manner adverb in postverbal position, is only an apparent exception; cf. chapter 8.2.3 below.) Recall that from the earliest documents on, non-phrasal adjuncts, i.e. adverbs such as *yì* 'also' (cf. [13] above) were already confined to the preverbal position.

(37) *Tā yě / měitiān / chángcháng lái   {*yě /* měitiān /* chángcháng}*
      3SG also/ every.day/ often   come also/ every.day/ often
      'He also comes every day/often.'

(38) *{Zài jiāli / báitiān } tā {zài jiāli / báitiān} xiūxí {*zài jiāli /*báitiān }*
       at home/ daytime he at home/daytime rest   at   home/ daytime
      '(At home/during daytime) he takes a rest (at home/during daytime).'

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6 As witnessed by their co-occurrence within the same sentence, the verbal suffix *-le* indicating perfective aspect is distinct from the homophonous sentence-final particle *le*. For the latter, cf. chapter 7.2.1.2 below.

(39) *Wǒ gěi tā dāng fānyì   (*gěi tā)*
      1SG for 3SG act   interpreter for 3SG
      'I serve as an interpreter for him.'

The constraints at work in the verb phrase are captured by C.-T. James Huang's (1982) formulation of the *X-bar structure of Chinese* (called *Phrase Structure Condition* since Huang 1984a: 54):

(40) a. $[_{Xn}$ X^{n-1} YP⋆] iff n= 1 and X ≠ N
      b. $[_{Xn}$ YP⋆ $X^{n-1}]$ otherwise
                          (C.-T. James Huang 1982: 41, [20]; section 2.3)

In other words, with the exception of the systematically head-final NP, the other projections examined by C.-T. James Huang (1982) are head-initial: the sentence projection IP (now TP) as well as the projections headed by the lexical categories verb, adjective and preposition. (Note that the NP has been head-final throughout the history of Chinese, from the earliest documents on up to now. Cf. Djamouri 1988; Djamouri, Paul and Whitman 2013a).

   Applied to the verb phrase, the *Phrase Structure Condition* (PSC) entails that the verb can only be followed by its (quasi-) argument (also cf. Y.-H. Audrey Li 1985, 1990).[7] Concerning the projections above the lexical verb phrase such as AuxP and AspP, they are also head-initial, thereby confirming the head-complement order in the extended verbal projection and strengthening the VO character of Modern Mandarin.

   First, auxiliaries are followed by their complement:

(41) *Tā kěyǐ qù, nǐ yě kěyǐ qù*   (Lü Shuxiang 2000 [1980]: 337)
      3SG can go 2SG also can go

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7 This is somewhat simplified insofar as a (secondary) predication on the matrix object occupies a *v*P-internal position (cf. C.-T. James Huang 1984b: 568; Paul 1988, ch. 7):

(i) *Zhāngsān yǒu yī běn shū$_i$ [wǒ kàn-bù-dǒng e$_i$]*   (cf. Huang 1984b: 569, [94])
     Zhangsan have 1 CL   book 1SG see-NEG-understand
     'Zhangsan has a book, which I don't understand.'

Furthermore, the way the *Phrase Structure Condition* (PSC) was formulated did not allow for the arguments in a double object construction (cf. [35] and [36] above) to both follow the verb, and this case had to be ruled in by "marked features of the verbs, which require both constituents following them to be subcategorized elements" (Huang 1982: 96-97, note 16). Note in this context that an analysis of the DO construction in terms of an additional head-initial projection (*Applicative Phrase*) hosting the goal argument solves this problem (cf. 2.2.2.2 below).

'He may go, you may go, too.'

(42) *Tā huì shuō jǐ ge yǔyán*
3SG can speak several CL language
'He can speak several languages.'

(43) *Xiànzài tā bù huì zài jiā* (Lü Shuxiang 2000 [1980]: 278)
now 3SG NEG will be home
'He should not be home right now'.

(44) *Tā yào xué yóuyǒng*
3SG want learn swim
'He wants to learn how to swim.'

(45) *Kuài yào xià yǔ le*
soon will fall rain SFP
'It (looks like it) will rain soon.'

Both *huì* and *yào* can also express an epistemic probability 'probably should' or 'probably will', besides their deontic meaning 'know how to' and 'want', respectively. (For further discussion of auxiliaries in Chinese, cf. among others C.-T. James Huang 1988, Y.-H. Audrey Li 1990: 149, Tang Ting-chi 2000).

The head-initial character of AuxP holds independently of the analysis adopted, be it as a raising verb selecting a clausal complement (cf. Lin Jo-wang and C.-C. Jane Tang 1995 a.o) or as a kind of control verb with a smaller complement (cf. McCawley 1992, Ernst 1994 among others). Importantly, as argued for by Ernst (1994), the distribution of adverbs demonstrates that auxiliaries do not realize the head of the highest projection hosting the subject (Inflection or Tense, respectively), but are located in the complement of Infl/Tense. In fact, VP-level adverbs occur between the subject and the auxiliary. This would be excluded if the auxiliary were the head in the same projection as the subject, no element being allowed to intervene between a head and its specifier (also cf. [41] above):[8]

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8 This is not the reasoning applied by Ernst (1994: 202), who instead invokes the general undesirability of adjunction to a non-maximal projection X-bar. If indeed the auxiliary realized the head Infl, so he argues, adverbs would need to adjoin to Infl-bar, given that Spec,IP hosts the subject: [$_{IP}$ S [$_{I'}$ adverb [$_{I'}$ [$_{Infl}$ Aux] VP]]]. Note that since the introduction of *Bare phrase structure* (cf. Chomsky 1995a), this type of adjunction is excluded.

(46) a. *Zhème wǎn. [TP Tā [T' [T° Ø] [AuxP hái [AuxP néng lái]]] ma ?*
so late 3SG still can come SFP
'It's already late. Can he still come?'
(Lü Shuxiang 2000 [1980]: 416)

b. *Xiǎolán míngtiān cái huì dào Běijīng*
Xiaolan tomorrow only.then will arrive Beijing
'Xiaolan will arrive at Beijing only tomorrow.'
(Ernst 1994: 201, [25b])

As indicated in (46a), while the specifier position of IP/TP is occupied by the subject, the head Infl/Tense itself remains covert in Chinese (cf. Ernst 1994: 208; also cf. Sybesma 2007). The position of AuxP as complement of Infl/Tense to the right of the overt subject in Spec, IP/TP, and hence to the right of the (covert) head confirms C.-T. James Huang's (1982: 41) claim that IP/TP is a head-initial projection.

Second, aspectual suffixes on the verb can also be accommodated within a uniformly head-initial extended verbal projection, provided they are analysed as heads selecting a verbal complement. The verb raises to the left of the aspectual head, as illustrated for the perfective aspect suffix *-le* and the experiential aspect suffix *-guo* in (47) and (48):

(47) *Tā yǐjīng [AspP [Asp° <u>mǎi-le</u>] [VP tmai sān ge shǒujī]]*[9]
3SG already buy-PERF 3 CL mobile.phone
'He already bought three mobile phones.'

(48) *Qiánnián wǒ [AspP [Asp° qù-guo] [VP tqu chángchéng]]*
last.year 1SG go-EXP great.wall
'Last year I went to the Great Wall.' (Lü Shuxiang 2000 [1980]: 247)

The configuration 'AspP over VP' was already proposed by Ernst (1994: 197-198), *modulo* the absence of V-to-Asp° movement in his analysis, where the aspectual head licenses *in situ* the corresponding suffix on the verb. (Also cf. Lin Tzong-Hong 2001: 258-259)

Third, negation precedes verbs (with or without aspect suffixes) and auxiliaries:

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9 This entails that so-called VP-level adverbs in fact adjoin to *v*P or AspP.

(49) *Tā bù qù, wǒ yě bù qù*
      3SG NEG go 1SG also NEG go
      'If he doesn't go, I don't go, either.'

(50) *Wǒ gēnběn bù [AuxP huì [tí zúqiú]]*
      1SG at.all NEG can kick football
      'I cannot play football at all.'   (Lü Shuxiang 2000 [1980]: 278)

(51) *Wǒ hái méi [AspP[Asp° qù-guo] [VP tqu chángchéng]]*
      1SG still NEG go-EXP great.wall
      'I haven't been to the Great Wall yet.'

There is no consensus about the exact status of negation in Modern Mandarin and different proposals exist, as also observed by Cheng and Sybesma (2004: 438-39). For example, Hsieh Miao-ling (2001: 61) assigns functional status to the negation *méi* and adverb status to *bù*, but her assumption that the functional head *méi* is located *below* AspP does not make the correct predictions for sentences such as (51) where *méi* is to the left of verb plus aspect suffix *-guo*. Ernst (1995) posits Spec, VP or Spec, AuxP as position for negation, while Cheng and Sybesma (2004: 439) themselves provisionally assume that *bù* occupies the specifier position of ModP in the extended verbal projection. In any case, irrespective of the precise status of negation, adverb or functional head (selecting its complement to the right), the preverbal position of negation is consistent with VO order.

To summarize this section, the extended verbal projection in Modern Mandarin is head-initial throughout: not only do we observe the order VO, but the same head-complement order likewise holds for the projections above VP such as AuxP and AspP up to IP/TP, i.e. the projection hosting the subject. Consequently there is no room for Li & Thompson's (1974a) statement that modern Mandarin is OV or "in the process of changing" towards OV. Let us now turn to the construction cited as their main evidence for OV order, namely the *bǎ* construction.

2.2.2 The *bǎ* construction

Since the *bǎ* construction is one of the most extensively studied phenomena in Chinese linguistics, I will not attempt to give an overview of the existing literature, but refer the reader to the comprehensive discussion and the references in Y.-H. Audrey Li (2006) (also cf. Huang, Li and Li 2009, ch. 5). Instead, I concen-

trate on those aspects of the syntactic analysis of *bǎ* that are important for the issue of word order.

(52) *Tā bǎ Lǐsì pāoqì   -le*
     3SG BA Lisi abandon-PERF
     'She abandoned Lisi.'

Note from the outset that in contrast to statements sometimes encountered in the literature (cf. Soh 1998 among others), the *bǎ* construction is not comparable to the obligatory object shift in Scandinavian languages which is contingent on verb raising to a *v*P-*external* position (cf. Holmberg 1986, 1999; Ferguson 1996 among others). On the contrary, definite DPs, proper names and pronouns may remain in the canonical postverbal object position in Modern Mandarin (cf. [53]).[10] Furthermore, *bǎ* appears to the right of negation, i.e. neither the object NP following *bǎ* nor the verb have left the *v*P (cf. [54]):

(53) *Tā pāoqì -le   { Lǐsì/ wǒ de péngyou/ wǒ}*
     3SG abandon-PERF   Lisi/ 1SG SUB friend / 1SG
     'She abandoned Lisi/my friend/me.'

(54) *Tā méi bǎ { Lǐsì/ wǒ de péngyou/ wǒ } pāoqì*
     3SG NEG BA   Lisi/ 1SG SUB friend / 1SG   abandon
     'She has not abandoned Lisi/my friend/me.'

2.2.2.1 The origin of the *bǎ* construction

Etymologically, *bǎ* was a verb meaning 'take, seize'; specialists in Chinese historical syntax generally treat it together with verbs including *jiāng* 'take' and *chí*

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10 For reasons of space, I will not discuss this optionality here, but refer the reader to the discussion of the semantic properties of the NP in the *bǎ* construction by Sybesma (1999) and Y.-H. Audrey Li (2006). Suffice it to point out that the constraints holding in the *bǎ*-construction lead to the interpretation of a bare object NP as definite (cf. [ii]), in contrast to the postverbal position (cf. [i]) where in general both an indefinite and a definite reading of bare NPs are possible:

(i) *Qǐng nǐ gěi wǒ bǐ*   (Y.-H. Audrey Li 2006: 422–423; [111a], [111b])
     please 2SG give 1SG pen
     'Please give me the pen/a pen.'
(ii) *Qǐng nǐ bǎ bǐ gěi wǒ.*
     please 2SG BA pen give 1SG
     'Please give me the pen.' [unavailable: 'Please give me a pen.']

'hold' that underwent a parallel development (Wang Li 1988[1958]: ch. 47, Zhu Minche 1957, Peyraube 1985, 1996: 168).[11] This set of 'take' verbs appeared in two distinct constructions:

(55)   巴粟与鸡呼朱朱
        [Bǎ   sù   yǔ   jī   ] hū   zhūzhū
         take grain give chicken call zhuzhu
        'While taking the grains and giving [them] to the chicken,
         he called out *zhu zhu*.'
        (洛陽伽蘭紀 *Luoyang Qielanji*, 6th c.; from Peyraube 1985: 197, [8])

In (55), the NP *sù* 'grains' not only functions as the object of the verb *bǎ* 'take', but also as the implicit (direct) object of the verb *yǔ* 'give'; accordingly, (55) instantiates an object sharing serial verb construction in the sense of Collins (1997).

    In the instrumental construction in (56), by contrast, no object sharing is involved: the object of the verb *jiāng* 'take' in the adjunct clause is *yù-zhàng* 'jade stick', while the object of the matrix verb *qiāo* 'tap' is *huā-piàn* 'flower petals'.

(56)   輕將玉杖敲花片
        Qīng   jiāng yù -zhàng   qiāo huā -piàn
        lightly take   jade-stick tap   flower-petal
        'Taking a stick of jade, she lightly tapped on the flower petals.'
        (張祜,公子行 Zhang Hu: *Gong zi xing*, 9th c.;
         from Wang Li 1988[1958]: ch. 47: 539)

    Adopting a VP complementation analysis for the object sharing serial verb construction (cf. Larson 1991, Collins 1997), the verbal projection headed by *bǎ* in sentence (55) has the following structure:

(57)   [$_{vP}$ *bǎ* [$_{VP1}$ *sù* [$_{V1'}$ t_{ba} [$_{VP2}$ pro *yǔ*]]]]
              take   grain   give

In (57) the verb *bǎ* 'hold, take' selects the second VP headed by *yǔ* 'give' as its complement. The object *sù* 'grains' shared by both verbs, *bǎ* and *yǔ*, is merged

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11 While *bǎ* is used in modern Mandarin, *jiāng* is its counterpart in more formal registers of present day Cantonese and Hakka.

in the specifier of the VP1 headed by *bǎ* and controls *pro* in the complement VP2.[12] *Bǎ* raises to *v*, deriving the surface order.

By contrast, the instrumental construction involves an adjunction structure as in (58); *jiāng* 'take' is the verb contained in an adjunct clause (with a covert subject *pro*) modifiying the main *v*P headed by *qiāo* 'tap', and its object *yù-zhàng* 'jade stick' is different from the object of *qiāo*, i.e. *huā-piàn* 'flower petals'. Accordingly, there is no control relation between the object of the verb (V₁) in the adjunct clause and the object of the matrix verb (V₂):

(58) *[vP qīng [vP[adj.cl.* pro *[VP1 jiāng yù -zhàng]][vP qiāo [VP2 tqiao huā -piàn]]]*
      lightly   take jade-stick   tap   flower-petal

While traditional analyses are perfectly aware of these two environments for 'take' verbs (cf. Zhu Minche 1957: 24), they content themselves with observing the different interpretation possibilities and do not posit two corresponding distinct structures. Instead, they either assume an adjunction structure as in (58) for both cases (Zhu Minche 1957, Wang Li 1988[1958]: ch. 47) or a coordinate structure (Peyraube 1985: 208; Cui Guibo 1984). This notwithstanding, researchers agree, following Zhu Minche (1957), that the object sharing pattern in (57) is the source structure for the modern *bǎ* construction, the earliest examples of which are attested since the 8th c. (cf. [59a–b] from Zhu Minche 1957: 18, 28). Note that there is no instrumental pattern with *bǎ* in modern Mandarin.

(59) a. 獨把梁州凡幾拍
          Dú   bǎ Liángzhōu fán   jǐ   pāi
          alone BA Liangzhou melody several.times play
          'Alone, I'll play the Liangzhou melody several times.'
          (顧況詩 *Gu Kuang shi*, 8th c.)

      b. 孫子將一鴨私用 [...] 鞭二十....
          Sūnzǐ   jiāng yī yā   sì   yòng [...], biān   èrshí
          grandson JIANG 1 duck   privately use   whip   20...
          'When the grandson uses a duck for himself, [...]
          [then he will receive] 20 whiplashes.'
          (張鷟，朝野僉載 Zhang Zhuo, *Chao ye qian zai*; 8th c.)

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12 Following C.-T. James Huang (1989: 194), no distinction is made between (ungoverned) PRO and (governed) *pro*; instead, both "are treated as instances of the category null pronominal, subject to the same rule of control [...]."

Given that *Liángzhōu fán* 'Liangzhou melody' does not refer to a concrete entity that can be seized or held, *bǎ* clearly cannot be analysed as verb ('seize, hold') here. Furthermore, as to be discussed immediately below (cf. section 2.2.2.2), the presence of the frequentative adverb *jǐ* 'several times' below *bǎ* and the following NP likewise indicates that (59a) represents the structure *after* the reanalysis of *bǎ* has taken place.[13] The same observation applies to (59b) where the manner adverb *sì* 'privately' precedes the verb *yòng* 'use' below *jiāng* and the NP. In other words, (59a) and (59b) instantiate the modern *bǎ* construction where the NP following *bǎ* is no longer the object of *bǎ*, but only that of the VP below.

Consequently, if we were to adopt the traditional analysis of modern *bǎ* as a preposition (cf. Li & Liu 1955; Wang Li 1988 [1958] ch. 47; Chao 1968), subsequently adopted by Li and Thompson (1974a), and the object sharing structure in (57) as source structure, the following change should have taken place:

(60) $[_{vP} \, b\check{a} \, [_{VP1} \, NP_i \, [_{V1'} \, t_{ba} \, [_{VP2} \, pro_i \, V2 \,]]]] \Rightarrow [_{vP} \, [_{PP} \, b\check{a} \, NP] \, [_{vP} \, V]]$

While in the object sharing structure serving as input, *bǎ* as head of VP1 is the main verb and VP2 its complement, in the output structure we obtain more or less the exact opposite hierarchy: the erstwhile complement VP is now the main VP, and the phrase headed by *bǎ* – now a PP due to V-to-P reanalysis of *bǎ* – is adjoined to it.[14] As a consequence, the originally shared object is now the object of the preposition alone and no longer that of the (erstwhile second) verb. According to Li and Thompson (1974a) then, the example of the *bǎ* construction in Modern Mandarin given at the outset of this section has the following structure (abstracting away from V-to-Asp movement here):

(61)   *Tā   [[_{vP}[_{PP}   bǎ   Lǐsì] [_{vP}   pāoqì   -le]]*   (= [52] above)
         3SG   BA   Lisi   abandon-PERF
         'She abandoned Lisi.'

2.2.2.2 A new analysis for *bǎ* in modern Mandarin
Although this prepositional analysis of *bǎ* became the standard analysis in Chinese linguistics (cf. Mei Kuang 1980, Huang 1982; Peyraube 1985, 1996; Y.-H.

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13 The adverb *jǐ* 'several times' is always preverbal in that period, irrespective of the text type (poetry or prose).

14 Rearrangement of the original hierarchical relations is also observed when adopting as source structure the symmetric coordinate VP structure assumed by Peyraube (1985):

(i) $[_{VP1} \, b\check{a} \, NP_{obj}] \, [_{VP2} \, V2 \, pro] > [[_{VP} \, [_{PP} \, b\check{a} \, NP_{obj}] \, [_{vP} \, V]]$

Audrey Li 1990 among others), it was never judged really satisfactory. One of the numerous questions raised from the very beginning was how to account for the relation of subcategorization between the verb and its object NP when the latter was contained in an adjunct PP. Similarly, assuming movement of the object from the VP into the adjunct PP created the problem that the object could not c-command its trace (also cf. section 2.2.2.3 below). Furthermore, in many respects *bǎ* in modern Mandarin did not pattern with prepositions. Considerations such as these led to the by now widespread consensus that *bǎ* is best viewed not as a preposition, but as the head of a higher (functional) projection above the verb phrase (Sybesma 1992, 1999a; Zou Ke 1993, Whitman 2000, Whitman and Paul 2005; Y.-H. Audrey Li 2001, 2006; Paul 2002a among others).[15] In the light of this new approach, the observations incompatible with the prepositional status of *bǎ* can now be accounted for.

First of all, as observed by Wu Meng (1982: 434) it is possible to conjoin two occurrences of preverbal object plus VP under *bǎ* (bracketing added):

(62) *Māma [...] [bǎ*
      Mom   BA
      [[dì   cà   -le   yòu   cà] [zhuōzi mā -le   yòu   mā]]]
      floor scrub-PERF again scrub   table wipe-PERF again wipe
      'Mom again and again scrubbed the floor, and again and again wiped
      the table.'

Wu Meng (1982) explicitly cites (62) as problematic for the alleged prepositional status of *bǎ* and points out that no other preposition can take two "discontinuous" complements (here *dì* 'floor' and *zhuōzi* 'table'). (63) below is of the same type as Wu Meng's example (62): [16]

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15 The analysis of *bǎ* as a non-prepositional head goes back to Anne Yue Hashimoto (1971) who considers it a verb. Hashimoto proposes a ternary branching structure where *bǎ* takes both an NP and a clause as its complements. Ross (1991), Chen Xilong (1993), and Bender (2000) basically follow Hashimoto's (1971) analysis. Crucially, under this analysis, the NP following *bǎ* is not contained in the complement VP of *bǎ*; accordingly the coordination data in (62) and (63) below cannot be accounted for.

16 (63) and the argument based on it are due to Thomas Ernst, who attributes them to Audrey Li. The original example provided by Ernst (cf. [i]) is, however, not conclusive, because it can also be parsed as containing two conjoined clauses, the second of which is a topic-comment structure:

(i)   *[Wǒ bǎ Amēi jièshào   gěi Lǐsì], [[topic Měilì]i [pro jièshào   ti gěi Lǎolǐ]]*
       1SG BA Amēi introduce to   Lisi   Mary   introduce   to   Laoli
       'I introduce Amei to Lisi; as for Mary, I introduce [her] to Laoli.'

(63) *Nǐ   zuì hǎo   bǎ*
       2SG most good BA
       [[Amēi jièshào   gěi Lǐsì], [Měilì jièshào   gěi Lǎolǐ]]
       Amei introduce to Lisi Mary introduce to Laoli
       'You'd better introduce Amei to Lisi and Mary to Laoli.'

These examples confirm that *bǎ* is a higher head selecting a verbal projection as complement, which in turn can be a coordinated structure. They would be difficult to explain if *bǎ* and the immediately following NP formed a constituent, as the prepositional adjunct analysis of *bǎ* in (61) holds. Note that the behaviour of *bǎ* in (62) and (63) contrasts sharply with (64), where a true adjunct PP is involved:

(64) *Wǒ zhīdao nǐ [PP duì   wǒ] hěn yǒu yìjiàn,*
       1SG know 2SG   towards 1SG very have prejudice
       *[PP *(duì)   Amēi] yě   hěn yǒu yìjiàn*
       toward Amei also very have prejudice
       'I know that you are very prejudiced against me, and also against Amei.'

(64) is totally ungrammatical without the second occurrence of the preposition *duì* 'towards'.

Adding an adverbial phrase like *zuì hǎo* 'better' as in (63) makes the parsing of the second conjunct as a topic-comment structure impossible.

In fact, some native speakers show the same parsing ambiguity for Wu Meng's example and interpret the second clause in (62) as a topic-comment structure: 'Mom again and again scrubbed the floor; the table, she again and again wiped [it]'. Again, it suffices to embed the sentence further, for example under *shì bù shì* 'is it the case or not' in order to exclude this parsing and to obtain the structure intended by Wu Meng (1982):

(ii)   *Māma shì bù shì [bǎ*
       Mom   be NEG be   BA
       [[dì   cà -le yòu cà] [zhuōzi mā -le   yòu mā]]] ?
       floor scrub-PERF again scrub table wipe-PERF again wipe
       'Is it the case that Mom again and again scrubbed the floor and again and again wiped the table?'

Note finally that it is evidently possible to conjoin two projections headed by *bǎ* as well:

(iii) *Tā zuì hǎo*
       3SG most good
       [[bǎ [Amēi jièshào   gěi Lǐsì]], [bǎ [Měilì jièshào   gěi Lǎolǐ]]]
       BA Amei introduce to Lisi   BA Mary introduce   to Laoli
       'He'd better introduce Amei to Lisi and Mary to Laoli.'

A further argument against the prepositional analysis of *bǎ* is its inability to appear as a modifier of a relational DP, in contrast with prepositions such as *duì* 'towards':[17]

(65) a. [_{DP} *Lǐsì* [_{PP} *{duì* /**bǎ} zhèi jiàn shì*] *de ānpái*]
Lisi   towards/ BA this CL matter SUB arrangement
bù tuǒdàng
NEG suitable
'Lisi 's arrangement of this matter is not suitable.'

   b. *Lǐsì* [*duì*   *zhèi jiàn shì*] *bǎ xìjié dōu ānpái-hǎo-le*
Lisi towards this CL matter BA detail all arrange-good-PERF
'Zhangsan with respect to that matter arranged all the details.'
(Fu Jingqi, p.c.)

As (65b) illustrates, *bǎ* can introduce the object DP of the verb *ānpái* in a verbal projection, but not in its nominal counterpart (65a). The unacceptability of *bǎ* in (65a) also shows that *bǎ* in the *bǎ* construction has to be distinguished from lexical verbs, since verbs such as the relative of *bǎ* (descendent from the same root), meaning 'guard,' can head the VP in a relative clause.

(66) [_{DP}[_{rel.clause} *bǎ*   *mén*] *de*   *nèi ge rén*] *shuìzháo -le*
guard door SUB that CL person fall.asleep-PERF
'The person who guards the door has fallen asleep.'

(For further evidence against *bǎ* as a lexical verb, cf. Y.-H. Audrey Li 2006: 380–381.)

Last, but not least, since *bǎ* and the following NP do not form a constituent (cf. [67]), they cannot be topicalized to the left of the subject as PPs can (cf. [68] and [69]): [18]

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17 Prepositions are not allowed as modifiers of non-relational nouns (cf. [i]), but must be embedded in a relative clause (cf. [ii]):

(i)   *[_{DP} [_{PP} *duì*   *tā*] *de* *huà*]
towards 3SG SUB word
(intended: 'the words for him')

(ii)   [_{DP}[_{TP} *wǒ* [_{PP} *duì*   *tā*] *shuō*] *de* *huà*]
1SG   towards 3SG speak SUB word
'the words I spoke to him'

(67)   *(*bǎ shū) Nǐ kěyǐ bǎ shū   fàng zài zhuōzi shàng,*
      BA book 2SG can BA book put at table on
     (*bǎ dàyi) Nǐ kěyǐ bǎ dàyī fàng zài chuáng shàng
      BA coat 2SG can BA coat put at bed on
     'The books, you can put on the table, the coat, you can put on the bed.'

(68)   [PP *Gěi Mǎlì], wǒ (gei Mǎlì) zuò -le húnduntāng,*
      for Mary 1SG for Mary make-PERF wonton.soup
     [PP *gěi Amēi], wǒ (gěi Amēi) zuò -le   chǎomiàn*
      for Amei 1SG for Amei make-PERF fried.noodles
     'For Mary, I made wonton soup, for Amei, fried noodles.'
     (Paul 2002a: 164)

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18 In contrast, Y.-H. Audrey Li (2006: 382) reports acceptable sentences of precisely this type from the colloquial North Chinese register:

(i)   *Bǎ zhèi kuài ròu, nǐ xiān qiē qiē ba!*   (Y.-H. Audrey Li 2006: 382; [15b];
    BA this CL meat 2SG first cut cut SFP   Huang, Li, and Li 2009: 167; [34b])
    'Cut the meat first.'
(ii) *Bǎ nà duī wénzhāng, wǒ zǎo jiù   gǎi -hǎo -le*
    BA that pile article   1SG early then correct-finish-PERF
    'I corrected that pile of articles long ago.'
    (Y.-H. Audrey Li 2006: 459; note 20, [i]; Huang, Li, and Li 2009: 167; note 23, [i])

However, so far I have not been able to find any native speaker, from either mainland China or Taiwan, who can replicate these judgements. Instead, they agree on the acceptability of the following structures:
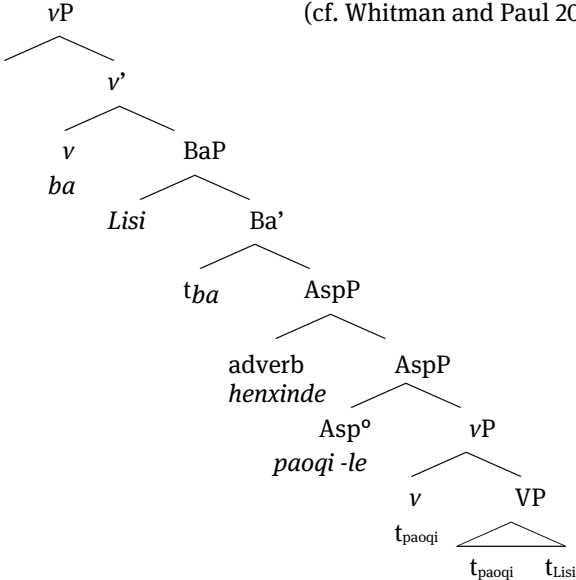
(iii) *Zhèi kuài ròu, nǐ xiān qiē qiē ba!*
    this   CL meat 2SG first cut cut SFP
    'Cut the meat first.'
(iv) *(Nǐ) xiān bǎ zhèi kuài ròu   qiē qiē ba!*
    2SG first BA this CL   meat cut cut SFP
    'Cut the meat first.'

In (iii), the object NP *zhèi-kuài ròu* 'this piece of meat' is topicalized (without *bǎ*), whereas in (iv) *bǎ* and its complement to the right of *xiān* 'first' are sentence-internal, the subject *nǐ* 'you' being optional in the imperative.

On the basis of (i) and (ii), Y.-H. Audrey Li (2006: 383) as well as Huang, Li and Li (2009: 167) conclude that besides a "head taking [NP VP] as its complement" *bǎ* can also be analysed as a preposition (cf. Y.-H. Audrey Li 2006: 383) or as "retain[ing] the verbal property with the meaning of 'handle, deal with' "(cf. Huang, Li, and Li 2009: 178). It is, however, left open how to choose between these two analyses in the case of a sentence-*internal bǎ*-construction, which not only raises a problem for the linguist, but much more so for the child learner.

(69) *Yóujú   , [PP cóng zhèr],[TP nǐ wàng nán qù]*
      post.office   from here   2SG toward south go
      'The post office, from here, you go south.'
      (Lü Shuxiang 2000 [1980]: 130)

The analysis of the *bǎ* construction proposed here shares the basic assumptions of previous analyses of *bǎ* as a higher head above the verb phrase, i.e. *bǎ* takes a verbal projection as its complement (*v*P or AspP) and does not assign a thematic role to the NP following it. It differs, however, from these analyses (to be presented immediately below) in postulating movement of the object NP (here *Lǐsì*) to Spec, BaP as well as movement of *bǎ* to the higher *v*:

(70)   *v*P   (cf. Whitman and Paul 2005: 88, [16])

                     v'

               v   BaP
               ba

                   Lisi   Ba'

                        t*ba*   AspP

                            adverb   AspP
                            henxinde

                                  Asp°   *v*P
                                  paoqi -le

                                        v   VP
                                        t_paoqi

                                            t_paoqi   t_Lisi

(71) *Tā bǎ Zhāngsān hěnxīnde pāoqì -le.*   (Tsai Mei-chih 1995: 166)
      3SG BA Zhangsan cruelly   abandon-PERF
      'She heartlessly abandoned Zhangsan.'

A concrete argument for the movement analysis is the acceptability of VP-level adverbs (e.g. manner adverbs, *hěnxīnde* 'cruelly' in [71], and frequentatives like *zài* 'again' in [73]) below *bǎ* and the following NP (cf. Y.-H. Audrey Li 2006: 410 for a similar observation). This acceptability would be difficult to explain if the object had not moved into a position above *v*P or AspP, respectively. The low adverb position in combination with the derivation of aspect suffixes via V-to-

Asp° raising is also the motivation for having BaP itself selected by (the highest) *v*, inducing subsequent raising of *bǎ* to *v*.[19]

Importantly, as observed by Tsai Mei-chih (1995: 166), when occurring below *bǎ* as in (71) above, manner adverbs have a strict "ad-VP" manner interpretation, in contrast with the subject-oriented reading when preceding *bǎ*:

(72)   *Tā   hěnxīnde   bǎ   Zhāngsān   pāoqì   -le.*   (Tsai Mei-chih 1995: 166)
       3SG cruelly   BA   Zhangsan   abandon-PERF
       'She heartlessly abandoned Zhangsan.'

When the adverb *hěnxīnde* 'heartlessly' precedes *bǎ*, the subject *tā* 'she' is described as heartless in general, while the adverb below *bǎ* indicates that only her action of leaving Zhangsan was heartless. Other adverbs besides manner adverbs likewise display interpretational differences linked to their position, above or below *bǎ*:

(73)   a.   *Nǐ   zài   [$_{vP}$ bǎ[$_{BaP}$ t$_{ba}$ chēzi [$_{vP}$ yòng [$_{VP}$ t$_{yong}$ sān tiān]]]] ba!*
            2SG again   BA   car   use   3   day   SFP
            'You can again have the car for three days.'

       b.   *Nǐ [$_{vP}$ bǎ [$_{BaP}$ t$_{ba}$ chēzi [$_{vP}$ zài   [$_{vP}$ yòng [$_{VP}$ t$_{yong}$ sān tiān]]]] ba!*
            2SG   BA   car   again   use   3   day   SFP
            'You can have the car for another three days.'

As I have tried to capture in the translation, when *zài* 'again' precedes *bǎ* (cf. [73a]) it scopes over the entire event and implies that at some time in the past the car had already been borrowed for three days. When *zài* 'again' occurs below *bǎ*, it only scopes over the lower *v*P and is interpreted as bearing on the duration expression *sān-tān* 'three days'; accordingly, (73b) is a permission to extend the lending period for another three days.

The existence of an adverb position below *bǎ* and the meaning differences observed for the same adverb when above *bǎ* nicely confirm the multiple-layered structure of the verbal projection headed by *bǎ* in (70), which is more

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19 Structure (70) presents the same analysis as Y.-H. Audrey Li (2006: 410, [90]), *modulo* our adding AspP in (70). However, Y.-H. Audrey Li finally discards this structure in favour of (i) where *bǎ* now stays *in situ*, while the verb (V3) still raises (to v1) and the NP following *bǎ* (NP2) is explicitly stated to originate from a lower position (NP3 or XP):

(i)   [$_{BaP}$ S [$_{Ba'}$ *bǎ* [$_{vP1}$ NP2 [$_{v'}$ v1 [$_{vP2}$ NP3 [$_{v'}$ V3 XP]]]]]]   (Y.-H. Audrey Li 2006: 412, [93])

These two instances of movement are abandoned in Huang, Li and Li (2009) (cf. [75] below).

complex than a "corresponding" structure without *bǎ*, where only one adverb position is available:

(74) *Tā hěnxīnde pāoqì -le (*hěnxīnde) Zhāngsān (*hěnxīnde)*
  3SG cruelly abandon-PERF cruelly Zhangsan cruelly
  'She heartlessly abandoned Zhangsan.'

(Recall from section 2.2.1 above that adverbs are barred in general from postverbal positions.)

In contrast to the analysis in (70) above, in Huang, Li and Li's proposal (2009: 178) both *bǎ* and the following NP, located in the specifier position of the *v*P complement to *bǎ*, remain *in situ*:

(75)   BaP   (cf. Huang, Li, and Li 2009: 178, [62])

Their analysis requires the additional assumption (which is not spelt out) that AspP is situated *above* BaP and that the relation with the aspectual suffix on the verb is established via Agree rather than by movement. This is necessary in order to avoid the wrong surface orders obtained if the verb moved to an AspP above BaP, *[AspP V-Asp [BaP *bǎ* [vP object NP [v' tv [VP tv XP]]]]] or to an AspP between BaP and *v*P, *[BaP *bǎ* [AspP V-Asp [vP object NP [v' tv [VP tv XP]]]]], respectively. However, as we will see in section 2.2.2.3 below when discussing *bǎ* with double object verbs, there is additional evidence for raising of both the NP and the verb, where no alternative account via Agree is feasible.

Concerning the acceptability of VP-level adverbs below *bǎ* discussed above, in Huang, Li and Li (2009: 178) it is captured by adjoining the adverb to VP. Note that the somewhat anachronistic adjunction site VP rather than *v*P implies the absence of V-to-*v* movement. Furthermore, Huang, Li and Li's (2009) analysis seems to work only under the adjunction scenario for adverbs, to the exclusion of the cartographic view (cf. Cinque 1999) where an adverb is located in a

dedicated projection whose head in turn selects the projection containing the verb as its complement. By contrast, the analysis by Whitman and Paul (2005) presented in (70) above is consistent both with the adjunction approach and the cartographic view

Another claim put forward by Y.-H. Audrey Li (2006: 411) and Huang, Li, and Li (2009: 172) does not bear further scrutiny, either, *viz.* that each *bǎ* sentence has a counterpart without *bǎ*. Complex predicates in the form of verb-object phrases (e.g. *bà zhí* 'stop work' = 'to fire') represent a class of systematic counterexamples. The "outer" object selected by such a 'verb + (inner) object' phrase is precisely excluded from the postverbal position, as already observed by Huang 1982 (section 2.3, examples [21a-d]); also cf. Paul (1988) for further discussion):[20]

(76) a. *Shàngjí yào bǎ tā [vP bà zhí]*   (cf. Paul 1988: 48)
          boss want BA 3SG   stop work
          'The boss wants to fire him.'

 b. * *Shàngjí yào [bà zhí] tā*
          boss want stop work 3SG

(77) a. *Tā hái méi bǎ wénjiàn guī dàng*
          3SG still NEG BA document return file
          'He has not filed the documents yet.'

 b. * *Tā hái méi [guī dàng] wénjiàn*
          3SG still NEG return file document

---

20 The same holds for certain ditransitive verbs such as *dàngzuò* 'consider as' where it is impossible to have both NP arguments in postverbal position (cf. [ii]):

(i)   *Wángchéng bǎ xuéxiào dàngzuò-le [zìjǐ de jiā]*
       Wangcheng BA school consider-PERF self SUB home
       'Wangcheng regards school as his home.'   (Lü Shuxiang 2000 [1980]: 151)

(ii)   * *Wángchéng dàngzuò-le xuéxiào [zìjǐ de jiā].*
       Wangcheng consider-PERF school   self SUB home

In fact, Y.-H. Audrey Li (2006: 413–414) discusses verb-object phrases. However, she concentrates on the idiomatic character of many VOPs such as *kāi dāo* 'open knife' = to do surgery', where the possibility of the inner object to follow *bǎ* can then be taken as evidence for its having raised from the VP. Sentence pairs such as (76) – (78) below showing that only the *bǎ* sentence is well-formed in contrast to the non-*bǎ* "counterpart" are not discussed.

(78) a. *Nǐ yīnggāi bǎ zhèi ge cài huí guō*
      2SG must BA this CL meal return pot
      'You have to cook this meal again.'

    b. **Nǐ yīnggāi [huí guō] zhèi ge cài*
      2SG must return pot this CL meal

In fact, as pointed out by Huang (1982, section 2.3) the unacceptability of the (b) sentences above is an immediate consequence of the *Phrase Structure Condition* (PSC) (cf. [40] above). The PSC allows the argument(s) subcategorized for by the verb itself to occupy the postverbal position; by contrast, it prohibits any constituent following such a complete verb phrase.[21]

As seen above, researchers agree now that *bǎ* is not a preposition, but a higher head selecting a verbal projection as its complement. The general consensus does not go beyond this, given the different assumptions about the archictecture of the extendend verbal projection in the *bǎ* construction just discussed. Furthermore, the exact status of *bǎ* itself needs yet to be determined, as becomes evident when consulting Sybesma (1999a), Y.-H. Audrey Li (2006) and Huang, Li, and Li (2009) who each devote an entire chapter to the *bǎ* construction and can therefore be taken as representative of recent research.

Sybesma (1992; 1999a, ch. 6) extends his analysis of the *bǎ* construction as causative, based on the subset with resultative verb compounds such as *kū-lèi* 'cry-tired', to all instances:[22]

(79) [*CauseP Zhèi jiàn shì*[*Cause'* [*Cause°* *bǎ*][*VP Lǐsì* [*VP kū* [*XP tLisi* [*X° lèi* -*le*]]]]]]
        this CL matter BA Lisi cry tired-PERF[23]

(80) [*CauseP Zhèi jiàn shì* [*Cause'* [*Cause°* *kū-lèi* -*le*] [*VP Lǐsì* [*VP tLisi tlei*]]]]
        this CL matter cry-tired-PERF Lisi

---

21 As pointed out by C.-T. James Huang (1982: 45; section 2.3), if the unacceptability of [[V inner object] outer object] were exclusively due to the case filter, then the outer object should be fine in postverbal position when preceded, i.e. case licensed by *bǎ* (still analysed as a preposition back then). However, the sequence '[V inner object] [*bǎ* outer object]' is ill-formed.

22 The same analysis is adopted in Cheng and Sybesma (2015, section 3.1.2), *modulo* the fact that *bǎ* is now explicitly stated to instantiate *v*. Being shorter, the name *Lǐsì* instead of the original *Zhāngsān* is chosen.

23 Note that Sybesma (1999: 163-165) does not include the perfective aspect suffix -*le* in his causative structure (cf. his [79] and [84]); I therefore present it as forming a block with the verb.

'This thing got Lisi tired from crying.'
(Sybesma 1999a: 181; [108a-b]; his translation)

As indicated above, the head Cause is either realized by the insertion of *bǎ* (cf.
[79]) or by the verb raised from the VP complement of the head *Cause* (cf. [80]).

However, in the light of the data provided above (especially those lacking a
"counterpart" without *bǎ*) as well as (81) and (82) below, even the very "loose"
sense of causative does not hold for all *bǎ* sentences, *viz.* "the subject brings
about ('causes') a new state of affairs characterizable as the result of the event
denoted by the verb" (Sybesma 1999a: 180).

(81) *Mǎlì bǎ zuótiān   wǎnshàng de shì   gàosu tā*
      Mary BA yesterday   evening   SUB matter tell 3SG
      'Mary told him about last night's affair.'

(82) *Tā néng liánxù   bǎ zhè zhǒng wèntí   xiǎng*
      3SG can continuously BA this kind problem think
      jǐ   ge xiǎoshí
      several CL hour
      'He can think about this kind of problem for hours at a stretch.'
      (Paul 2002a: 161)

Furthermore, the structure proposed by Sybesma (1999a: 180) illustrated in (79)
makes wrong predictions. For example, it cannot be correct that the NP follow-
ing *bǎ* occupies a VP-adjoined position, given the acceptability of adverbs be-
low this NP (cf. [71] above). It is not clear, either, how sentences where *bǎ* se-
lects a conjunction of two verbal projections (cf. [62] – [63] above)) can be
accommodated in Sybesma's analysis, where the NP is not in the specifier of
bǎ's complement, but adjoined to it. Last, but not least, the complement se-
lected by *bǎ* can be a verbal projection larger than a simple VP, e.g. an AspP.
While Sybesma (1999a) explicitly rejects the prepositional analysis of *bǎ*, he
does not address the issue of the properties of *bǎ* any further. Also note that
while *bǎ* can be inserted into the head position of CausP, according to Sybesma
(1999a: 165, 179) it is this Cause head and not *bǎ* that selects the VP comple-
ment, *bǎ* being a "dummy". This seems to imply that *bǎ* itself does not have any
c-selectional properties. (For a critical appraisal of Sybesma 1999a, cf. Huang,
Li, and Li 2009, section 5.6.).

Turning now to Y.-H. Audrey Li (2006: 383) and Huang, Li, and Li (2009:
167), they state that *bǎ* is the "head of a projection, taking [NP VP] as its com-
plement." In order to try to pin down the status of this head they compare *bǎ*

with its counterpart *ka* in (the spoken register of) Taiwanese.[24] Given that unlike *bǎ*, *ka* can assign a theta role to the following NP, they conclude that "the *bǎ* construction in Mandarin can be viewed as a more grammaticalized and emptier version of the *ka* construction in Taiwanese." (Huang, Li and Li 2009: 185). In other words, "*ka* is more 'lexical' than *bǎ*: *ka* can directly assign a thematic role (an affected theta-role) to the *ka* NP. *Bǎ*, on the other hand, does not assign a thematic role. A *ka* NP can be base-generated, but a *bǎ* NP always originates from within the verb phrase." (Y.-H. Audrey Li 2006: 412).[25] Unfortunately, this does not provide a straightforward result, but rather transfers the question to the precise status of *ka*, which is left open. To summarize, Y.-H. Audrey Li (2006) and Huang, Li, and Li (2009) consider *bǎ* as a head, which selects a *v*P complement and which case-licenses the NP in the specifier position of this *v*P.

The proposal developed in Whitman (2000) and Whitman and Paul (2005) (cf. [70] above) provides the following somewhat more articulated analysis. Heading a projection within the extended verbal projection, *bǎ* has a categorial [+V,-N] feature, as evidenced by its compatibility with auxiliaries and negation (cf. [77a], [82] above). *Bǎ* also has a c-selectional [V] feature, which captures the obligatory verbal nature of its complement (such as *v*P or AspP), whose internal structure can in turn be very complex (cf. [85] below). Finally, *bǎ* has an EPP feature triggering movement of the object NP to its specifier, i.e. Spec,BaP is a case licensing position

2.2.2.3 Necessary digression on *bǎ* in the double object construction

BaP is not the only higher argument-hosting projection above VP to be postulated in Chinese. It shares properties with the *Applicative Phrase*. Following the spirit of Pylkkänen's (2002, 2008) analysis of double object constructions, Paul and Whitman (2010) postulate the additional projection ApplP for the recipient

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24 I abstract here from their proposal that *bǎ* can also be a preposition (cf. footnote 18 above) and concentrate on *bǎ* as a head selecting a verbal projection as complement.
25 Given the translation of her example (i) cited as support of this observation (Y.-H. Audrey Li 2006: 412, [92]), it is not excluded that the *ka* claimed to assign an affected theta role (i.e. the first instance: *ka gua* 'KA me') is in fact an instance of an ethical dative PP headed by the homophonous preposition *ka* 'for':

(i)   *Li-e syaNim na <u>ka gua</u> se -ka   molang thiaN-u ,*
       your voice if KA me small-extent nobody hear -have
       gua e   <u>ka li</u> si taolo
       I   will KA you fire job
       'If your voice is so small that nobody can hear you(at my cost), I will fire you.'
       (Transliteration, glosses and translation as given by Y.-H. Audrey Li).

argument of donatory double object verbs such as *sòng* 'give (as a present)'. In Chinese, it is the immediately verb-adjacent *gěi* in the double object construction of the form 'S V-*gěi* IO DO' that realizes the head of ApplP and selects the VP projected by the donatory verb as its complement:

(83)   *Wǒ sòng-gěi-le   ta   yī tái diànnǎo*
          1SG give-GEI-PERF 3SG 1 CL   computer
          'I gave him a computer (as a present).'

(84)   *Wǒ bǎ yī tái diànnǎo   sòng-gěi-le   tā*
          1SG BA 1 CL   computer give-GEI-PERF 3SG
          'I gave him a computer (as a present).'

(85)

```
            TP
           /  \
              T'
             /  \
           T°    vP
                /  \
                    v'
                   /  \
                  v    BaP
                  bǎ  /  \
               diànnǎo  Ba'
                      /  \
                    t_ba   AspP
                          /  \
                            Asp'
                           /  \
                         Asp°   ApplP
                       sòng-gěi-le /  \
                                 tā    Appl'
                                     /  \
                              t_song gei  VP
                                        /  \
                                     t_ta   V'
                                          /  \
                                      t_song  t_diànnǎo
```
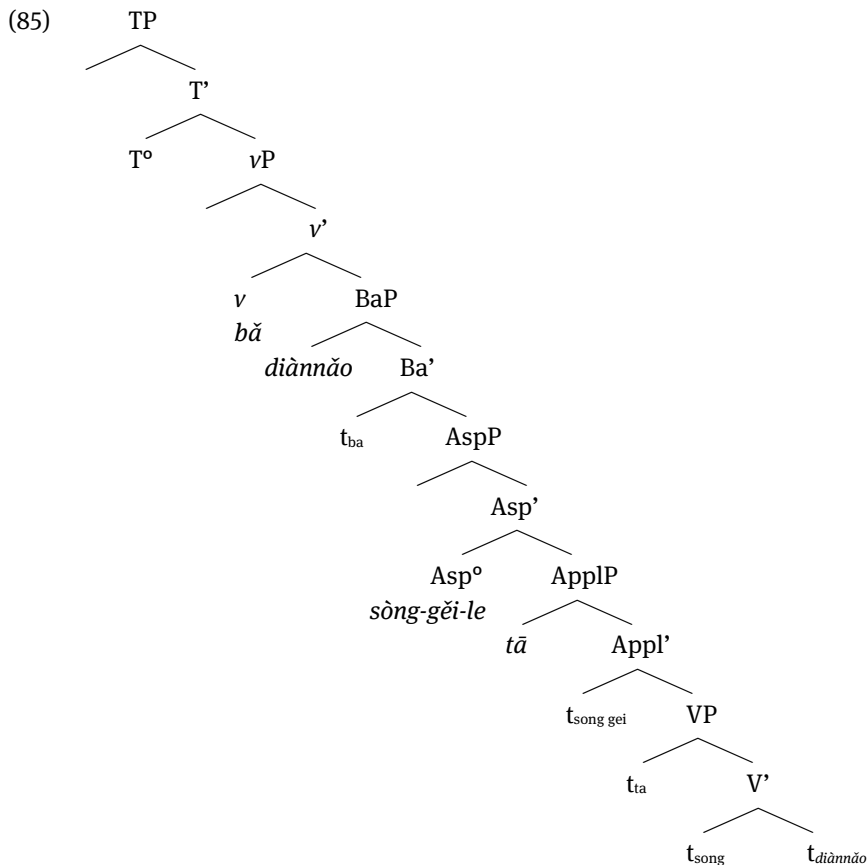
As illustrated in the tree diagram (85) above, which provides the detailed derivation of (83) and (84), ApplP selects the VP projected by a double object donatory verb and via its EPP feature attracts the goal argument (here *tā* 'him') to its specifier. The donatory verb *sòng* 'give (as a present)' raises and left-adjoins to the head of ApplP, i.e. *gěi*, and the resulting sequence *sòng-gěi* then raises on to the head of AspP, the perfective aspect suffix *-le*. This AspP can in turn be selected by *bǎ* (cf. [84]), whose EPP feature is then checked by the direct object (*yī tái diànnǎo* 'a computer') raised from the VP.[26]

This type of sentence where the NP following *bǎ* is the theme argument of a donatory verb again highlights the fact that the verbal projection selected by *bǎ* can be very complex. Accordingly, Spec,*v*P immediately above the lexical VP as the position hosting the object NP in the *bǎ* construction as proposed in Huang, Li and Li (2009: 178, [62]) (repeated here in [86]) is much too low and leads to incorrect predictions.

(86)   [$_\text{BaP}$[$_\text{Ba'}$ *bǎ* [$_{v\text{P}}$ NP [$_{v'}$ *v* [$_\text{VP}$ V XP]]]]]

Note that the identification of the verb-adjacent *-gěi* as head of ApplP and the presence of *bǎ* and the theme argument (*diànnǎo* 'TV' in [85]) above the recipient argument *tā* he' consolidates the necessity for *bǎ*, the verb and the NP to raise in the *bǎ* construction, as proposed in (70) above. It renders unfeasible the assumption in Huang, Li and Li (2009) that – on a par with the NP – the verb remains *in situ* and that an aspectual suffix on the verb is licensed via Agree with an AspP *above* BaP (cf. the comments on [75] above). More precisely, the fact that in the double object construction the verb plus the overt realization of Appl° *-gěi* surface in a position above the recipient argument *tā* 'he' hosted by Spec,ApplP indicates that the verb and *-gěi* must have raised.

Paul and Whitman (2010) provide several arguments showing that the sequence 'V-*gěi*' obtains via movement in syntax, not by a word-formation rule in the lexicon (cf. Y.-H. Audrey Li 1990: 106). One argument relies on the behaviour of 'V-*gěi*' in so-called 'A-not-A' questions (cf. Huang 1982, ch. 4.3 for this term and further discussion; also cf. Huang, Li and Li [2009, ch. 7.3])

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26 Unlike Pyllkänen (2002, 2008) who derives double object constructions by positing ApplP *below* the lexical VP (her "low" Applicative), Paul and Whitman (2010) provide extensive evidence from Chinese and other languages for the general position of ApplP *above* the lexical VP, as depicted in (85).

(87) a. *Tā [ᵥ∘ xǐ-huān] bù [ᵥ∘ xǐ-huān] shùxué ?*²⁷
            3SG like   NEG   like   mathematics
            'Does she like mathematics?'

      b. *Tā xǐ- bù xǐ-huān shùxué ?*
            3SG like NEG like   mathematics
            'Does she like mathematics?'

(88) a. * *Tā huán -gěi bù huán -gěi nǐ qián*?
            3SG return-GEI NEG return-GEI 2SG money

      b. *Tā huán   bù huán -gěi nǐ qián*?
            3SG return   NEG return-GEI 2SG money
            'Will he return the money to you?'
            (slightly modified example from Peyraube 1980: 227)²⁸

While for verbal compounds such as *xǐ-huān* 'like', either the entire compound (cf. [87a]) or only its first member (*xǐ-*) may precede negation (cf. [87b]), this choice does not exist for the sequence 'V-*gěi*', which precisely cannot be treated as a unit (cf. [88a]). This straightforwardly obtains when assuming that 'V-*gěi*' is built in the syntax, unlike verbal compounds coming from the lexicon.²⁹

2.2.2.4 Wrap-up

The architecture of the extended verbal projection in Chinese is much more articulated than assumed by Huang, Li, and Li (2009) in their analysis of the *bǎ* construction; consequently, the complement selected by *bǎ* can be much more complex than just a simple *v*P and contain projections such as AspP and ApplP.

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27 Though it is difficult here to come up with separate glosses for *xǐ* and *huān*, both meaning 'like', *xǐ-huān* is clearly analyzable, as witnessed by the separate appearance of *xǐ* and *huān* in numerous compounds such as *huān-hū* 'like-shout' = 'cheer', *xǐ-ài* 'like-love' = 'be fond of' etc.
28 Peyraube (1980: 226) interprets this contrast as evidence for the prepositional status of the verb-adajcent -*gěi*, thus confirming the traditional analysis 'V [ₚₚ *geǐ* IO] DO' adopted in Chinese linguistics. Evidently, under this analysis the positioning of the aspect suffix -*le* between *gěi* and the IO, 'V-*gěi*-*le* IO DO', is completely unexpected and cannot be accounted for.
29 Even in a framework such as *Distributed Morphology* where compounding is reduced to syntactic operations, this difference between compounds such as *xǐ-huān* 'like' and the 'V-*gěi*' sequences must somehow be captured, perhaps by distinguishing compounds composed of purely lexical heads from compounds involving higher heads such as Appl°.

Importantly, this complement selected by *bǎ* is to its right and thus involves head-complement order in accordance with VO. In other words, the very construction presented as main evidence by Li and Thompson (1974a) for their claim of modern Mandarin as an SOV language turns out to provide additional evidence for its VO character.

2.2.2.5 *Bǎ* and the relation between synchrony and diachrony

The analysis proposed for *bǎ* as a higher functional head in the extended verbal projectionis also a neat illustration of how to conceive of the relation between synchrony and diachrony. Importantly, the discarded prepositional analysis of *bǎ* in modern Mandarin is likewise untenable from a diachronic point of view, as argued for in detail by Whitman (2000). Whitman demonstrates that reanalysis can only change features in the relevant heads (*relabelling*), whereas the hierarchical relations, i.e. the c-command relations between the constituents in the source structure, must be maintained in the output structure (*Conservancy of structure constraint*). As already alluded to above, the prepositional analysis of modern *bǎ* implies a complete rearrangement of the original hierarchical relations holding in the object sharing source structure, a scenario precisely excluded by Whitman's *Conservancy of structure constraint*. By contrast, the revised analysis of modern *bǎ* respects the hierarchy present in the source structure and at the same time resolves matters which had remained unexplained under the prepositional analysis of *bǎ*. For ease of comparison, all the relevant structures are repeated below.

Object sharing serial verb construction as source structure:

(89) $[_{vP}$ *bǎ* $[_{VP1}$ *sù$_i$* $[_{V1}$ t_{ba}] $[_{VP2}$ pro$_i$ *yǔ* *jī* *]]]* (= [57] above)
       take grain   give chicken
       'take the grains and give them to the chicken'

In (89) the verb *bǎ* 'seize, hold' selects the second VP headed by *yǔ* 'give' as its complement. The object *sū* 'grains' shared by both verbs, *bǎ* and *yǔ*, is merged in the specifier of the VP headed by *bǎ* and controls *pro* in the complement VP (VP2). *Bǎ* moves to *v*, deriving the surface order.

Modern bǎ *as a higher head selecting a verbal projection:*

(90) $[_{vP}$ *bǎ* $[_{BaP}$ *Lǐsì* $[_{Ba'}$ t_{ba} $[_{AspP}$ *hěnxīnde* $[_{AspP}$ *pāoqì-le* $[_{vP}$ t_{paoqi} $[_{VP}$ t_{paoqi} t_{Lisi}]]]]]]]$
       BA Lisi   cruelly   abandon-PERF

Modern bǎ *as a preposition heading a preverbal adjunct phrase*

(91)　　[*AspP* [*PP* **bǎ** *Lǐsì*] [*AspP* *hěnxīnde* [*AspP* *pāoqì* -le [*vP* t*paoqi* [*VP* t*paoqi* t*Lisi*]]]]]
　　　　BA　Lisi　　　cruelly　　　abandon-PERF

When comparing (89) with (90) we see that in both the object sharing source structure and the modern structure, *bǎ* heads the complex verb phrase and selects a verbal projection as complement. Consequently, the hierachical relations of the source structure are conserved in the modern *bǎ* construction. The changes that have occurred are as follows. First, modern *bǎ* no longer assigns a thematic role to the NP following it, unlike the 'take' main verb in the object sharing structure, i.e. there is no more object sharing. Instead, the NP is assigned its theta role by the verbal projection as a whole, which is that of a patient affected by the action/event in question. Second, the NP in the Spec of BaP (*Lisi* in [85]) moves to that position, as witnessed by the position of adverbs to its right. Third, the very same acceptability of adverbs below *bǎ* attested from the beginning of the modern *bǎ* construction on (cf. [59] above dating from the 8th c.) also indicates that *bǎ*'s complement is minimally a *v*P and therefore larger than just a VP, the latter commonly assumed to be the size of the complement in object sharing serial verb constructions (cf. Collins 1997 among others). In other words, concomitant with the reanalysis of *bǎ*, the size of its complement changed into a potentially complex verbal projection containing several subprojections such as AspP and ApplicativeP, resulting in a high position for *bǎ* in the extended verbal projection in Chinese.

This view of the relation between synchrony and diachrony is much more appropriate and in accordance with standard assumptions than the so often evoked "verbal origin" of *bǎ* claimed to be reponsible for its present day properties (most recently in Huang, Li, and Li 2009: 178; cf. footnote 19). Note that the child acquirer is only exposed to the synchronic data and has no access to (knowledge about) earlier stages of the language, nor does the average native speaker dispose of such information. The only "remnant" of the "verbal origin" of *bǎ* in present day Mandarin is the hierarchy between the head *bǎ* and its complement, a relation readily discernible on the basis of synchronic data alone.

Let us now turn to the prepositional analysis of *bǎ* in (91) and examine what would be the the consequences of this choice both for synchrony and diachrony. First, as is easy to see, in (91) the hierarchical relations of the object-sharing source structure in (89) are not maintained. Quite on the contrary, the former head of the complex verb phrase, *bǎ*, is now contained in an adjunct phrase, which modifies the main verbal projection AspP on a par with the ad-

verb *hěnxīnde* 'cruelly'. In addition the verb originally contained in the complement VP now plays the role of the main verb. Whitman's *Conservancy of structure constraint* would only be respected if such an adjunction structure were to be postulated not only for the output structure, but also for the source structure. However, in addition to the problems with a prepositional analysis of *bǎ* already outlined, there exist other arguments showing that the adjunction structure is not a feasible analysis, either for modern *bǎ* or for the source structure.

If indeed the adjunction structure in (91) were likewise chosen as source structure, as proposed by Zhu Minche (1957) and Wang Li (1988[1958]: ch. 47), the interpretation associated with it must be 'take grains and give [them] to the chicken' in order to obtain the object sharing reading agreed upon by the specialists of Chinese historical syntax:

(92)   [*VP2*[*adjunct VP1* *bǎ* *sù*] [*VP2* pro *yǔ* *jī*]
                    BA grain   give chicken
        'take grains and give [them] to the chicken'

In other words, it is the adjunct VP1, *bǎ sù* 'take grains', that contains the overt object NP which needs to control the empty category in the main VP2 headed by *yǔ* 'give' in order to account for the observed co-referentiality between sù 'grains' and this empty category. However, a closer look reveals that an adjunction structure cannot be the correct structure for object-sharing *bǎ*.

Importantly, unlike what we observe for the *bǎ* construction (cf. [95] below), where coreference between the *bǎ*-NP and the empty category following the verb is obligatory, the empty category in the main VP is in general disjoint in reference from the object NP contained in an adjunct VP (VP₁), although some speakers allow coreference as well:

(93)   *Lǐsì* [*vP* [*VP1* *chòng-zhe Lǎolǐᵢ*] [*vP* *pīpíng* [*VP2* *tₚᵢₚᵢₙₘ biérén*   /proⱼ/ᵢ]]
        Lisi   face-DUR Laoli   criticize   someone.else
        'Facing Laoli, Lisi criticized someone else/himⱼ/ᵢ.'

The object *pro* in the main VP can either refer to a third person, as does the overt NP *biérén* 'someone else', or be coreferential with the object in the adjunct VP.

The same holds for the control relation between the complement of a preposition in an adjunct position and the empty object in the main VP:[30]

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30 Recall that no distinction is made between PRO and *pro* (cf. C.-T. James Huang 1989: 194).

(94) *Tā* [*vP*[*PP* *wèile Lǎolǐ_i*] [*vP* *bāng -le Mǎlì/ pro_{j/i} nèi-ge máng*]]
      3SG   for Laoli   assist-PERF Mary   that-CL occupation
      'For Laoli's_i sake, he lent Mary/him_{j/i} a hand.'

In (94), *pro* can again refer to a person different from Laoli, i.e. *pro* can be on a par with the overt NP *Mǎlì*. In addition, *pro* can also be coreferential with *Lǎolǐ*.

Crucially, while native speakers vary with respect to the availability of coreference between *pro* in the main clause and the NP in the adjunct clause, they *all* accept the *disjoint* refererence interpretation. This is completely excluded in the case of the *bǎ* construction where coreference is obligatory, because the empty category (in the form of a trace or a copy) in the verbal complement projection results from raising of the NP to Spec, BaP:

(95) *Wǒ* [*vP* *bǎ* [*BaP* *Lǎolǐ_i t_{ba}* [*AspP* *pīpíng -le* [*vP* *t_i hǎojǐ cì*]]]] *le*
      1SG   BA   Laoli   criticize-PERF   so.many time SFP
      'I have criticized Laoli many times.'
      (Excluded reading: 'I have criticized somebody else than Laoli.')

This fact constitutes an additional argument against the prepositional analysis of modern Mandarin *bǎ* with the *bǎ* PP in adjunct position and, by extension, against positing such an analysis for the object-sharing construction having served as its input.[31]

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31 As noted by the reviewer, the NP complement of a preposition can c-command beyond the PP and for example cause a Principle C violation when co-indexed with a proper name lower in the structure, as illustrated below for Chinese and German. (Cf. C.-T. James Huang 1983: 80, foonote 4; for a recent discussion, cf. Bruening 2014):

(i)   *Wǒ* [*PP* *wèile tā*₊_{i/j}] *zhěnglǐ-le* [*Wángwǔ_i de fángzi*]
      1SG   for 3SG   tidy -PERF Wangwu SUB room
      'I tidied up Wangwu's room for him.'
(ii) *Ich habe für ihn*₊_{i/j} *Peters_i Zimmer aufgeräumt*
      1SG have for him Peter_{Gen} room   tidied
      'I tidied up Peter's room for him.'

As far as I can see, this strengthens rather than weakens the relevance of the contrast just observed for the possible interpretations of the empty category in sentences with an adjunct PP versus the bǎ construction; visibly, lack of c-command of *pro* is not responsible for the partial failure of native speakers to establish coreference between *pro* and the preceding NP complement of the preposition.

2.2.3 Interim summary:
Word order in Modern Mandarin and the *bǎ* construction

The preceding section on word order in modern Mandarin has provided ample evidence invalidating Li and Thompson's (1974a) claim that present day Chinese is in the process of changing into an OV language. On the contrary, the extended verbal projection in modern Mandarin displays systematic head-complement order in accordance with VO: verbs (including double object verbs) precede their object(s), and auxiliaries their verbal complements; adverbs and negation occupy a preverbal position. Furthermore, the *bǎ* construction, Li and Thompson's main piece of evidence for alleged SOV order in modern Mandarin 'S *bǎ* O V', has been demonstrated to involve head-complement order as well: *bǎ* selects as its complement a verbal projection to its right. Note that this verbal projection can be rather complex (AspP, ApplP) and must be a maximal projection, given that it can be preceded by VP-level adverbs which surface below *bǎ* and the following NP. In other words, neither the object NP nor *bǎ* remain *in situ* (*contra* Y.-H. Audrey Li 2006; Huang, Li, and Li 2009), rather, they raise to Spec,BaP and the higher *v*, respectively. While scholars differ with respect to the exact status of *bǎ* and the structural details of the complex verbal projection headed by *bǎ*, this analysis of *bǎ* has become the established consensus. It can finally account for several basic properties of the *bǎ* construction which had always puzzled specialists of Chinese syntax and remained unexplained under the prepositional account of *bǎ* and the associated adjunction structure where the object of the verb was contained in the adjunct PP: S [vp [pp *bǎ* NP] V XP]].

2.3 Word order (distorted) through a typological lens

The main purpose of this chapter was to invalidate once and for all Li and Thompson's (1974a: 208) still influential claim that Chinese has undergone major word order changes during the past three thousand years: OV > VO > OV. In reality, Chinese represents precisely the opposite case, i.e. a language which has shown VO order for all of its history, since the earliest attested documents from pre-Archaic Chinese (13th c. BC) up to today.[32] Concerning the cases of surface OV order attested in pre-Archaic Chinese, not only are they limited to specific syntactic constructions (focus clefts and pronouns in negative con-

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[32] According to Djamouri, Paul and Whitman (2007, 2012), SVO can plausibly be postulated as the original constituent order of proto-Sino-Tibetan as well.

texts), against the background of VO as default word order, but under closer inspection they reveal underlying head-complement order consistent with VO.

A large part of the "evidence" provided by Li and Thompson (1974a) for the alleged OV character of the earliest and present stage of Chinese is based on typological considerations, in particular the work by Greenberg (1963). Based on a sample of thirty languages from different language families,[33] Greenberg (1963) examines the possible correlations between the following sets of criteria: (i) presence of prepositions vs postpositions; (ii) type of dominant order for (nominal) subject, (nominal) object and verb in a declarative sentence: VSO, SVO, SOV; (iii) relative order between adjective and the noun it modifies. In addition, generalizations on a larger scale going beyond these three parameters are proposed as well (cf. universal 14 below). The result is a "basic order typology" (cf. Greenberg 1963: 76) consisting of forty-five universals, presented either as general statements, such as the universals #3, 4 and #14, or in the form of implicational universals 'If A, then B', such as the universals #5 and #25.

(96) Selection of universals from Greenberg's (1963) appendix III (pp. 110–113)

    a. Universal 3
       Languages with dominant VSO order are always prepositional

    b. Universal 4
       With overwhelmingly greater than chance frequency, languages with normal SOV order are postpositional.

    c. Universal 5
       If a language has dominant SOV order and the genitive follows the governing noun, then the adjective likewise follows the noun.

    d. Universal 14
       In conditional statements, the conditional clause precedes the conclusion as the normal order in all languages.

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33 These 30 languages are (in the order given by Greenberg 1963: 74–75): "Basque, Serbian, Welsh, Norwegian, Modern Greek, Italian, Finnish (European); Yoruba, Nubian, Swahili, Fulani, Masai, Songhai, Berber (African); Turkish, Hebrew, Burushaski, Hindi, Kannada, Japanese, Thai, Burmese, Malay (Asian); Maori, Loritja (Oceanian); Maya, Zapotec, Quechua, Chibcha, Guarani (American Indian)". Chinese figures in the appendix II (p. 109) where – alongside Finnish, Estonian, Ijo, Algonquian and Zoque – it illustrates the basic order type 15, *viz*. a SVO language with postpositions and the order 'adjective noun' as well as 'genitive noun'.

    e. Universal 25
        If the pronominal object follows the verb, so does the nominal object.

Although Greenberg (1963: 76) presents the three parameters as equipollent, the dominant word order type, i.e. VSO, SVO or SOV seems to be the decisive factor. This is evident from Greenberg's (1963: 97–102) discussion of harmony, where "[h]armonic and disharmonic relations [...] are examples of generalizations" insofar as "[i]n similar constructions, the corresponding members tend to be in the same order" (p. 97). Combining the universals #3 and #4, he concludes that "OV is harmonic with postpositions while VO is harmonic with prepositions". Via the subjective genitive as in *Brutus' killing of Cesar*, he then establishes the parallel between verb and noun, on the one hand, and subject or object and the genitive, on the other, in order to explain the "overwhelming association of prepositions with governing noun – genitive order and of postpositions with genitive – governing noun order" (p. 99). As a result, prepositions are claimed to be harmonic with the order 'noun genitive', in contrast to postpositions which are harmonic with the order 'genitive noun'. In a further step, Greenberg (1963: 99) extends the observation holding for the relative order of genitive and noun to that of adjective and noun, given that both adjective and genitive modify the noun. It is this chain of harmonic relations that makes the Chinese nominal projection "exceptional" typologically speaking, because the VO order leads to the prediction of the genitive and the adjective following the noun, contrary to the facts. (Note that in Chinese all modifiers – including relative clauses – precede the noun).

    Notwithstanding the explicitly statistical nature of these correlations (cf. Greenberg's own formulations: "almost always", "with overwhelmingly greater than chance frequency" etc.), Li and Thompson (1974a) seem to take them as absolute statements. (For a detailed analysis of the different types of generalizations in Greenberg's work, cf. Whitman 2008; also cf. chapter eight below.) It is on this basis that they suggest that the OV properties of the head-final NP "triggered" the third step in their historical scenario, i.e. the change "back" to OV, allegedly still in process today (cf. Li and Thompson 1974a: 208). Their reasoning remains confusing, though, because at the same time they acknowledge the existence of the head-final NP as a constant factor in the history of Chinese; why and when such a constant factor could have acted as a "trigger" for change is difficult to understand.

    The important role typological considerations played in the analysis of a given language at that time is also visible in James H.-Y. Tai's (1973) article on "Chinese as a SOV language", curiously enough not mentioned by Li and Thompson (1974a). When trying to settle the issue of the *underlying* order for

modern Mandarin from which to derive the observed surface structures SVO and SOV, James H.-Y. Tai (1973) opts for SOV, precisely because of the cross-categorial correlations observed by Greenberg (1963) in his language sample, which make Chinese pattern with SOV languages such as Japanese. Like Japanese, Chinese has a systematically head-final NP and postpositions, lacks *wh*-movement (Greenberg's "identical order for questions and statement") and uses a sentence-final particle for yes/no questions .

As will become evident in the remainder of this book, typological considerations in the form of cross-categorial correlations have continued to play a decisive role in Chinese syntax and have often influenced the choice between competing analyses, although not always in the right direction.

3 Prepositions as adpositions, not V/P hybrids*

General linguists might be surprised by the fact that even with respect to fundamental issues such as the inventory of lexical categories there is still no consensus in Chinese linguistics. Prepositions are a case in point. Y.-H. Audrey Li (1990, chapter 2), for example, presupposes their existence and analyses them as case assigners; Djamouri and Paul (1997, 2009) demonstrate the necessity to distinguish between prepositions and verbs from the very first pre-Archaic documents on (13th c. - 11th c. BC) up to today. By contrast, Huang, Li and Li (2009: 29-30) assign them a "hybrid" or "categorially dual" status, reminiscent of Li and Thompson's (1974b) term *coverb* coined in order to grasp the allegedly "still" verbal nature of Chinese prepositions.[1] Cheng and Sybesma (2015) go a step further; they emit doubts as to the very existence of prepositions in Chinese and leave the issue open.[2]

This situation has its origin in the existence of numerous pairs of (historically related) homophonous prepositions and verbs: preposition *zài* 'in, at' and verb *zài* 'be, exist'; preposition *gěi* 'to, for; on behalf of' and verb *gěi* 'give'; preposition *duì* 'towards, concerning' and verb *duì* 'face, aim at'; preposition *gēn* 'with' and verb *gēn* 'follow', preposition *dào* 'to, until' and verb *dào* 'arrive' etc.[3] Homophony alone is insufficient reason to combine two items into a single lexical category. Homophony between members of different lexical categories is observed in many languages (as in the case of English present participles homophonous with prepositions such as *concerning*, *regarding*; cf. McCawley

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* This chapter, as well, owes a lot to joint work and extensive discussions with Redouane Djamouri and John Whitman.

1 "If prepositions are [-N, -V], then the members of the class (42c) [= *gěi*, *zài*, *xiàng*, cf. (1b); WP] cannot be treated simply as prepositions because they can also be used as verbs, which are [+V] by definition. We believe that this class has multiple statuses. As V, the words in (42c) are [-N, +V]; and as P, they are [-N,-V]." (Huang, Li and Li 2009: 30).

2 "The category P is also not unproblematic. First, it is not clear how many members the category has, *if it exists at all*. Although there are a small number of elements that only function prepositionally, most counterparts of prepositions in Indo-European languages can probably be considered as verbs that can function as the main or as a subordinate predicate in a sentence." (Cheng and Sybesma 2015, §3.1.1; emphasis mine) Note, though, that Cheng and Sybesma discuss this thorny issue on half a page only.

3 Note that this homophony between verbs and prepositions includes the tone, as can be seen from the identical *Pīnyīn* transliterations.

1992: 224), without leading to the radical position observed in Chinese linguistics where the homophony serves as the basis for questioning the distinctness of the categories. It is rather our preconceived ideas about the impoverished array of lexical categories typical of so-called isolating languages (in comparison with Indo-European languages) that allow us rather easily to conceive of Chinese as a language without the category preposition or with a categorially dual, hybrid variant thereof.

The aim of the present chapter is to provide substantial evidence in favour of the rather trivial claim that prepositions are a category distinct from verbs in Chinese. In order to have a sound data basis, section 3.1 provides a list of about thirty prepositions, with and without a "corresponding" homophonous verb. Section 3.2 studies the distribution of PPs and shows how confining the question 'preposition vs verb' to the preverbal adjunct position to the right of the subject has blurred their categorial distinctness. Section 3.3 demonstrates in detail that prepositions cannot function as predicates, neither as primary nor as secondary ones. Claims to the contrary turn out to be due to confusion of the verb with the homophonous preposition. Section 3.4 confirms the validity for Chinese of the ban on preposition stranding. It introduces additional diagnostics, though, because *inter alia* the *Adjunct Island Constraint* makes it impossible to use the impossibility of extracting the complement of a PP in preverbal adjunct position as unequivocal proof for the general ban on preposition stranding. Section 3.5 gives an interim summary of the results obtained for modern Mandarin before turning to the diachronic aspect of prepositions in section 3.6. This section addresses the "verbal origin" of prepositions, which is often vaguely invoked as "reason" for their "still" verbal properties, without it ever being spelt out how this remote historical information is supposed to be present in the grammar of native speakers today. It first discusses the prepositions *zài* 'in', *yú* 'at, to' and *zi* 'from' present in the earliest texts (13th c. BC); for the latter two no verb exists – at least in attested material – that it could have been reanalysed from. In the second part, a concrete case of V–to–P reanalysis is examined and it is shown how the constraints generally observed for reanalysis apply here as well. Last, but not least, section 3.7 summarizes the main conclusions and evaluates their consequences for claims made by general theories of change with respect to deverbal prepositions as a case of lexical reanalysis (cf. Longobardi 2001, Roberts and Roussou 2003).

3.1 Taking stock: Coverbs, unicorns and other mythic creatures in Chinese linguistics

Given the controversial status of the very existence of prepositions in Chinese, it is necessary to first get the situation straight datawise. A fairly comprehensive list of prepositions in spoken Mandarin is provided in (1a) and (1b), alongside the homophonous verb, if it exists.[4] Although this might seem a rather trivial task, drawing up this list turns out to be a healthy exercise, insofar as it provides us with more than thirty prepositions, among which eleven "exclusive" prepositions, i.e. prepositions without a homophonous verb. This certainly is too high a number to be simply dismissed. It thus straightforwardly challenges Cheng and Sybesma's (2015) claim about "preposition-only" items to be a *quantité négligeable* too insignificant to be taken as serious evidence for the existence of the category preposition. Note in this context that even if one somehow succeeded in subsuming prepositions under verbs, this would not allow us to "economize" on the category adposition in Chinese, given that Chinese also has postpositions (cf. chapter four below).

(1a)   List of exclusive prepositions (= 11)

- *chúle* 'except for, besides, in addition'
- *cóng* 'from, by way of'
- *duìyú* 'with regard to, of'
- *guānyú* 'about, concerning, with regard to'
- *hé* '(together) with'
- *wàng* 'to, towards'
- *wèi* 'for (the sake of), on behalf of'
- *wèile* 'because of, for (the sake of), on behalf of; in order to'
- *yīnwei* 'because of, on account of; because'
- *zhìyú* 'as for, as to'
- *zìcóng* 'since'

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4 This inventory is established on the basis of lists found in Hagège (1975), Chao Yuen Ren (1968: 754-769) and Li and Thompson (1981: 368-369) (even though the latter two call them *coverbs*). It does not include clearly dialectal items such as *dǎ* 'from' (the Northern dialect equivalent of standard Mandarin *cóng* 'from') nor items belonging to a more formal style or the written register such as *zì* 'from', *yīkào*, *yīzhào* 'according to', *yú* 'in, at, to' (corresponding to *zài* 'in, at' and *xiàng* 'to, towards' in spoken standard Mandarin) etc. Note that if the latter were counted as well, the number of prepositions, especially that of exclusive prepositions, would increase substantially.

All prepositions of the form 'X-*yú*' such as *duìyú*, *guānyú*, *zhìyú* (including those belonging to the written register not listed here) are exclusive prepositions. This is not surprising, because the preposition *yú* 'at, to' indicating spatial, temporal and abstract location and still used in the written register today is attested since the earliest documents dating from the 13th c. BC. (cf. section 3.6 below). Furthermore, as reflected in the translations, some of the prepositions in (1a) can also take a clausal complement, such as *wèile* 'in order to; for...to' and *yīnwèi* 'because'. (cf. Lu Peng 2008 for discussion). Last, but not least, the preposition *hé* 'with' is homophonous with the coordinating conjunction *hé* 'and'.[5]

(1b)   List of prepositions having a homophonous verbal "counterpart" (= 20)

- P *àn* 'according to, in the light of'   V *àn* 'conform to, comply with'
- P *ànzhào* 'according to; on the basis of'   V *ànzhào* 'conform to, comply with'
- P *bǐ* 'in comparison with'   V *bǐ* 'compare'[6]
- P *cháo* 'facing, towards'   V *cháo* 'face'
- P *dāng(zhe)* 'in front of, at'   V *dāng* 'serve as, consider as; think'
- P *dào* 'until, to'   V *dào* 'arrive'
- P *duì* 'toward'   V *duì* 'be opposite'
- P *gěi* 'to, for'   V *gěi* 'give'
- P *gēn* 'with, from'[7]   V *gēn* 'follow'

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5 The coordinating conjunction *hé* 'and' (cf. [i]) can be easily distinguished from the preposition *hé* 'with' (cf. [ii] and [iii]), because unlike the latter it cannot be separated from its second conjunct by adverbs, auxiliaries or negation:

(i)   [NP Wǒ (*yě / *bù) hé   tā] yě / bù   shì měiguórén
             1SG also/ NEG and 3SG also/ NEG be   American
        'Me and him also are Americans /are not Americans.'

(ii)   Wǒ yě [vP [PP hé   tā] jiǎng-le   yi jiǎng]
        1SG also   with 3SG talk -PERF 1 talk
        'I also talked to him a bit.'

(iii)   Ta hěn yuànyi [vP [PP hé   dàjiā   ] jiǎng yi jiǎng]
        3SG very wish   with everybody   talk 1 talk
        'He very much wants to talk a bit to everybody.'

6 Examples illustrating the preposition *bǐ* are given in (i) and (ii):

(i)   Tā shuō de [AP [PP bǐ   nǐ] dàshēng
        3SG talk DE   compared.with 2SG loud
        'He speaks louder than you.'

(ii)   Báitiān bǐ   wǎnshàng qìwēn   gāo wǔ dù
        daytime compared.with evening temperature high 5 degree
        'During the daytime, the temperature is five degrees higher than in the evening.'

- P *gēnjù* 'on the basis of, in line with'   V *gēnjù* 'follow, base oneself on'
- P *lí* 'from, away'   V *lí* 'leave, part from'
- P *líle* 'without, lacking'
- P *tì* 'for, on behalf of, instead of'   V *tì* 'replace, substitute for'
- P *tóng* '(together) with'   V *tóng* 'to be the same'
- P *wǎng* 'in the direction of, toward'   V 'go (in the direction of)'[8]
- P *xiàng* 'to, towards; from'   V *xiàng* 'face, turn towards'[9]
- P *yán(zhe)* 'along, following'   V *yán* 'trim (with a ribbon etc.)'
- P *yóu* 'by, through, up to, from'   V *yóu* 'let do as one pleases'
- P *zài* 'in, at'   V *zài* 'be at'
- P *zhào* 'in the direction of'   V *zhào* 'reflect; look after'

Again, this list is not exhaustive insofar as it does not include unclear cases (e.g. V *chèn* 'taking advantage of' vs P *chèn* 'while') nor prepositions used in a formal register only; accordingly, the total number of prepositions is clearly higher.[10]

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7 There is also a coordinating conjunction *gēn* 'and'. As illustrated above for the pair 'preposition *hé*' – 'conjunction *hé*', the position of adverbs allows us to distinguish between the two:

(i)   [NP *Xiǎo Lǐ (*dōu) gēn wǒ*] *dōu shì shānxī-rén*   (Lü Shuxiang 2000 [1980]: 231)
         Xiao Li   all   and 1SG   all be Shanxi-person
         'Xiao Li and I are both from Shanxi.'

The adverb *dōu* 'all' cannot intervene between the two NP conjuncts; furthermore, since *dōu* requires a plural NP to quantify over, the subject clearly is a coordinated NP.

(ii) illustrates the preposition *gēn* 'with' heading an adjunct PP modifying the embedded verb:

(ii)   *Nǐ qù* [[PP *gēn Lǎo Wáng*] *yánjiū yī-xià*]   (Lü Shuxiang 2000 [1980]: 230)
         2SG go   with Lao Wang   examine 1 -time
         'You go check it out with Lao Wang.'

8 The verb *wǎng* is largely confined to fixed expressions such as (i) and (ii) and to the V2 position in verbal compounds:

(i)   *Rén   lái   rén   wǎng*
         person come person go
         'People come and go'

(ii)   *Yī ge wǎng dōng, yī ge wǎng xī*
         1 CL go   east 1 CL go   west
         'One goes to the east, and one goes to the west.'

(iii)   *Chēduì* [V° *kāi -wǎng*] *Lāsà*   (Lü Shuxiang 2000 [1980]: 547)
         motorcade leave-go   Lhasa
         'The motorcade left for Lhasa.'

Note that the preposition *wàng* 'toward' (fourth tone), homograph with the verb *wǎng* 'go' (third tone) is unacceptable here (*kāi-wàng). For further discussion, cf. Chao Yuen Ren (1968: 758, footnote 48).

9 The verb *xiàng* 'face, turn towards' – like the verb *wǎng* 'go (in the direction of)' – mostly occurs as second verb in verbal compounds such as [V° *fēi-xiàng*] *dōngnán* 'fly to the south east'.

Before discussing in detail the arguments in favour of prepositions as a category distinct from verbs, I would like to briefly comment on some features emerging from a quick perusal of the lists in (1a) and (1b). The first thing to observe is that there are at least eleven exclusive prepositions and twice as many prepositions with a homophonous verbal "counterpart". Furthermore, the meaning differences observed for a given pair of homophonous preposition and verb can be important enough to make it difficult to subsume them under one item, as e.g. in the case of *dāng* and *yán* (cf. [1b]). Note that talking about "meaning differences" in fact amounts to stating differences in selectional restrictions, concerning both the syntactic category (c-selection) as well as the semantic properties of the category (s-selection) in question, as amply illustrated in the examples to be provided in the remainder of this chapter. Last, but not least, cases like *hé* 'with' (cf. [1a]) and *gēn* 'with' (cf. [1b]) also show that prepositions can in turn be homophonous with e.g. coordinating conjunctions such as 'and'. This makes it necessary to come to terms with homophonous items instantiating different categories, not only with homophonous verbs and prepositions.

While the observations above all point to the categorial distinction between verbs and prepositions (to be elaborated upon in the following sections), prepositions such as *chúle* 'except, besides', *wèile* 'for the sake of', *yánzhe* 'along', *dāngzhe* 'in front of' featuring the aspect suffixes *-le* and *-zhe* seem to precisely illustrate the verbal properties of prepositions often evoked in the literature and motivating their analysis as hybrid categories or *coverbs*. However, most scholars agree that *-le* and *-zhe* are here an integral part of the preposition itself [Prep° X-*le*/-*zhe*], hence not visible for syntax; accordingly, *-le* and *-zhe* do not convey perfective or durative aspect, respectively. This analysis is backed up by several pieces of evidence.

First, there is no choice between the alleged aspectual suffix at hand and the other suffixes, i.e. we do not observe an alternation between *-zhe*, *-le*, and *-guo* (experiential aspect) as we do for verbs. Second, either there is no counterpart without that suffix, as in the case of *chúle* 'except' for which no *chú* exists. Or we obtain a preposition with a different meaning, as in the case of *líle* 'without' which contrasts with *lí* 'from', and *wèile* vs *wèi*, where besides the meanings 'for (the sake of), on behalf of' conveyed by both *wèi* and wèile, *wèile* has

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10 Chao Yuen Ren (1968: 749-767) in his section 8.2.1 on prepositions comes up with a total of fifty-seven items. However, his list includes prepositions belonging to the written or formal style, some conjunctions and items such as *bǎ*, which in fact cannot be analysed as prepositions (cf. chapter 2.2.2. above).

the additional meaning 'because of'. Third, it is the "suffixed" form which is the base form, insofar as the non-suffixed form is subject to constraints and accordingly has a more limited distribution. This is, for example, the case for *yán* and *yánzhe* 'along'. While *yán* is only acceptable in combination with a small group of place nouns, *yánzhe* can select all kinds of NPs, concrete and abstract (cf. among others Chao Yuen Ren 1968: 763, Lü Shuxiang et al. 1980: 590).

(2) *Wǒ xiǎng [PP yán/yánzhe qiánggēn] zhòng yī-pái yángshù*
     1SG think   along   foot.of.wall plant 1 row willow
     'I intend to plant a row of willows along the foot of the wall.'
     (Lü Shuxiang 2000 [1980]: 590)

(3) *Wǒ [PP yánzhe/*yán [tā dāngnián liúxià de zújī]]*
     1SG   along   3SG that.time leave SUB track
     zǒufǎng-le   sānshí ge shì xiàn
     visit -PERF 30   CL town county
     'Following the itinerary made by her back then, I have visited
     thirty towns and counties.'

The case of *-zhe* in *yánzhe* 'along' and the like is thus on a par with *-ing* in the present participle forms of verbs reanalysed as prepositions, such as *concerning*, *regarding* in English. As pointed out by McCawley (1992: 224), the prepositions *concerning* and *regarding* (paraphrasable as *about*) allow pied piping (cf. [4a] and [5a]), in contrast to the verbs *concerning* and *regarding* (cf. [4b] and [5b]):

(4) a. *the persons [PP concerning whom] he made inquiries*

     b. ** the teachers [V concerning] whom John's problems have
         been tV recently*

(5) a. *a person [PP regarding whom] I have bad feelings*

     b. ** a person [VP regarding whom as an idiot] more and
         more people have been tVP*
                                          (McCawley 1992: 224; [21])

Clearly, the sequence *-ing* in the prepositions *concerning* and *regarding* is no longer visible in syntax as an inflectional element combining with verbs (also cf. Svenonius 2007). The same observation applies to *-zhe* and *-le* in Chinese prepositions; *-zhe* and *-le* here are not indications of the "still" verbal nature of prepo-

sitions in Chinese, but simply show that these prepositions have been reana-lysed from suffixed verb forms. In other words, with respect to the synchronic grammar, prepositions with an incorporated suffix such as *yánzhe* 'along' and *wèile* 'because of' and "bare" prepositions such as *cóng* 'from', *gēn* 'with' be-have exactly alike, i.e. the former, like the latter, lack an internal structure.

3.2 Prepositional Phrases and the preverbal adjunct position

Most studies discussing the question of whether prepositions are a sub-class of verbs or not concentrate on PPs in the preverbal position to the right of the sub-ject. As illustrated below, this is the default position for all kinds of phrases having an adverbial function i.e., adverbs, adjunct NPs (6), adjunct PPs (7) and PostPs (8), and clauses with a null subject controlled by, hence coreferential with, the matrix subject (cf. [9] and [10]):

(6)   *Tā* [_{NP} *xīngqītiān*] [_{vP} [_{adverb} *zǐzǐxìxìde*] [_{vP} *zhěnglǐ fángjiān*]]]
      3SG   Sunday   carefully   tidy   room
      'He carefully tidies up his room on Sundays.'

(7)   *Wǒ* [_{vP} [_{PP} *cóng   nóngcūn*] [_{vP} *huílái*]]
      1SG   from village   return
      'I return from the village.'

(8)   *Wǒ* [_{vP} [_{PostP} *chúxī*   *yǐqián*][_{vP} *yào huí   jiā*]]
      1SG   New.Year's eve before   need return home
      'I need to go home before New Year's eve.'

(9)   *Tā* [_{vP} [_{adjunct clause} pro *chuī-zhe   kǒushào*] [_{vP} *xià   lóutī*]]
      3SG   blow-DUR whistle   descend stair
      'He walked down the stairs whistling.'   (Chen Chung-yu 1986: 2, [10a])

(10) *Tā* [_{vP} [_{adjunct clause} pro *dǎ   diànhuà*] *jiào chē*]]
      3SG   strike phone   call car
      'He called a cab using the phone.'

Furthermore, given that negation and adverbs must occur at the left edge of the *v*P (inclusive of adjoined material), they precede adjunct PPs. The resulting sequence 'Neg/Adv PP VP' is often adduced as evidence for an alleged compati-

bility of PPs with negation and adverbs and hence for their allegedly hybrid status due to a "still" partly verbal nature:

(11)   *Tā hái méi yǒu [*ᵥₚ* [*ₚₚ* cóng nóngcūn] [*ᵥₚ* huílái]]*
        3SG still NEG   from village   return
        'He has not returned from the village yet.'

(12)   *Tā gāngcái [*ᵥₚ* [*ₚₚ* cóng zhèr] [*ᵥₚ* [*ₚₚ* wàng nán] [*ᵥₚ* zǒu-le]]]*
        3SG just.now   from here   toward south   go -PERF
        'From here, she went towards the south a moment ago.'

(13)   *Wǒ [*ᵥₚ* [*ₐdᵥₑᵣb* yǐjīng] [*ᵥₚ* [*ₚₚ* gěi Měilì][*ᵥₚ* dǎ   -le*
        1SG   already   to Mary   strike-PERF
        bàn ge xiǎoshí de diànhuà]]]
        half CL hour   SUB phone
        'I have already talked to Mary on the phone for half an hour.'

(14)   *Wǒ hái méi [*ᵥₚ* [*ₚₚ* gěi Měilì][*ᵥₚ* jì   yóujiàn]]*
        1SG still NEG   to Mary   send E-mail
        'I still haven't sent an E-mail to Mary.'

(15)   *Tā bù [*ᵥₚ* [*ₚₚ* zài Shànghǎi][*ᵥₚ* xué   fǎwén]]*
        3SG NEG   in Shanghai   study French
        'He does not study French in Shanghai.'

However, when the PP occurs somewhere other than in the preverbal adjunct position, e.g. in the sentence-initial topic position (cf. [16] – [19]) or as a modifier embedded in a DP (cf. [20]), the incompatibility of PPs with adverbs and negation becomes visible. Negation and adverbs cannot form a constituent with the PP; accordingly, the parses [*yǐjīng [*ₚₚ*gěi Měilì]]* and [*méi [*ₚₚ* gěi Měilì]]* for (16) and (17) and *[bù [*ₚₚ* guānyú Chomsky]]* for (20) are completely excluded:

(16)   *(*yǐjīng) [*ₚₚ* Gěi Měilì], wǒ [*ᵥₚ* [*ₐdᵥₑᵣb* yǐjīng] [*ᵥₚ* dǎ   -le*
        already   to Mary 1SG   already   strike-PERF
        bàn ge xiǎoshí de diànhuà]]]
        half CL hour   SUB phone
        'To Mary, I have already talked on the phone for half an hour.'

(17) (*méi) [_PP_ Gěi Měilì], wǒ hái méi [_vP_ [_vP_ jì   yóujiàn]],
      NEG   to Mary 1SG still NEG   send E-mail
      [_PP_ gěi Xiǎolǐ] wǒ yǐjīng   jì -le
          to Xiaoli 1SG already send-PERF
      'To Mary, I still haven't sent an E-mail,
      to Xiaoli, I have already sent one.'

(18) (*bù) [_PP_ zài Shànghǎi], tā bù [_vP_ xué fǎwén]], tā xué   hànyǔ
      NEG   in Shanghai 3SG NEG   study French 3SG study Chinese
      'He does not study French in Shanghai, he studies Chinese [there].'

(19) (*gāngcái) [_PP_ Cóng zhèr], tā gāngcái [_vP_ [_PP_ wàng   nán] zǒu
      just.now   from here 3SG just.now   toward south go
      'From here, she went south a moment ago.'

(20) Tā mǎi-le jǐ   běn [_DP_ [_PP_ (*bù) guānyú Chomsky] de shū]
      3SG buy-PERF several CL   NEG about Chomsky SUB book
      'He bought several books (not) about Chomsky.'

Consequently, prepositions cannot be negated and modified by adverbs; if they appear to be, it is by virtue of being an adjunct in an extended verbal projection.

In fact, it is well-known that in the configuration 'Neg (Aux) [_vP_ PP [_vP_ V O]]' negation has the entire verbal projection _v_P in its scope; accordingly, it can either negate the entire _v_P (21d) or subparts of it, i.e. the PP (21a), the verb (21b) or the object NP (21c).

(21) Tā bù [_vP_ [_PP_ zài Shànghǎi] [_vP_ xué   fǎwén]],
      3SG NEG   in Shanghai   study French
      'He does not study French in Shanghai,

      a. tā _zài Běijīng_ xué
          3SG in Beijing study
          he studies it in Beijing.'

      b. tā zài Shànghǎi _jiāo_   fǎwén
          3SG in Shanghai teach French
          he teaches French in Shanghai.'

      c. tā zài Shànghǎi xué   _hànyǔ_
          3SG in Shanghai study Chinese

he studies Chinese in Shanghai.'

d. *tā zài Běijīng jiāo hànyǔ*
   3SG in Beijing teach Chinese
   he teaches Chinese in Beijing.'

(22)   *Wǒ cónglái bù hé   Měilì tǎolùn yǔyánxué wènti*
       1SG ever   NEG with Mary discuss linguistics question
       'I never discuss linguistics with Mary,

a. *zhǐ hé Āmēi tǎolùn*
   only with Amei discuss
   I only discuss [linguistics] with Amei.'

b. *zhǐ hé tā tǎolùn zhèngzhì wèntí*
   only with 3SG discuss politics   question
   I only discuss politics with her.'

c. *qíshí wǒ bù xǐhuān gēn biérén tǎolùn wènti*
   in.fact 1SG NEG like   with others discuss question
   in fact, I don't like discussing with other people.'

(23)   *Nǐ bù néng [vP [PP cóng zhèi ge yóujú] jì   bāoguǒ],*
       2SG NEG can   from this CL post.office send parcel
       'You cannot send parcels from this post office,

a. *zhǐ néng cóng Lúfúgóng de yóujú   jì*
   only can from Louvre   SUB post.office send
   you can only send them from the Louvre post office.'

b. *zhǐ néng (cóng zhèlǐ) jì   xìn*[11]
   only can   from here send letter
   you can only send letters from here.'

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11 Some of the native speakers consulted prefer the following sentence in order to render the meaning of (23b):

(i)   *Nǐ cóng zhèi ge yóujú   bù néng ji bāoguǒ, zhǐ néng jì   xìn*
      2SG from this CL post.office NEG can send parcel only can send letter
      'From this post office, you cannot send parcels, only letters.'

    c. *zhǐ   néng (zài zhèlǐ) mǎi yóupiào*
       only can   in   here   buy   stamp
       you can only buy stamps here.'

Note that the dominant interpretation is to have negation bear on the adjunct PP only, rather than negating (components of) the event itself. This is plausible insofar as in the default case the fact of indicating the circumstances of an event implies its taking place. However, the other interpretations mentioned above are likewise present, as witnessed by the different options to continue the sentence which confirm the syntactic construal of negation with the entire *v*P. (Whether all of the theoretically possible readings exist also depends on the meaning of the sentence at hand.) Again, these observations hold irrespectively of whether a homophonous verb exists for the preposition or not.

    Last, but not least, it is not feasible to reduce the differences between verb and preposition to distributional differences in terms of main verb position vs verb in an adjunct clause, a point of view often encountered in the literature and also adopted by Cheng and Sybesma (2015). For a preposition can be shown to behave differently from a verb in the very same sentence-internal adjunct position. This fact is obscured most of the time, because the diagnostic context used here where negation is confined to the adjunct clause is not very common.[12]

    Let us first look at (24) and (25). Since the auxiliaries *xiǎng* 'want' as well as *huì* 'will' (cf. [26] and [27]) cannot select a negated verbal projection as complement, (24) and (25) are only acceptable because the negation does not form a constituent with the main verb projection inside the complement of *xiǎng*, but instead is part of the adjunct clause modifying the main verb *qīngchàng* 'sing'. Likewise, in (25) negation is syntactically construed with the verb in the adjunct clause, not with the main verb.

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12 The observation that negation may be construed with the VP in the adjunct clause and then have scope only within that adjunct clause is due to Teng Shou-hsin (1974: 136). However, his example (i) was not judged fully acceptable by the native speakers consulted, nor can the syntactic construal of negation with the entire verbal projection resulting in the structure *[bù [vP [adj.clause* pro *ná-zhe] chī]]* be excluded here:

(i)   *Bīngbāng, tā   bù   ná   -zhe chī*   Teng Shou-hsin (1974:136; [32a-b])
       lollipop   3SG NEG hold-DUR eat
       'He's eating the lollipop without holding it.'

Victor Junnan Pan deserves special thanks for his help in constructing examples (24) to (27).

(24) *Xiànzài wǒ xiǎng [ᵥP [adj.clause pro bù tīng bànzòu]*
      now   1SG want   NEG listen accompanying.music
      qīngchàng zhè shǒu gē]
      sing   this CL   song
      'Now I want to sing this song without listening to the
      accompanying music.'

(25) *Wǒ xiǎng [ᵥP[adj.clause pro bù bì -zhe yǎnjīng] shui jiào]*
      1SG want   NEG close-DUR eye   sleep sleep
      'I want to sleep without closing my eyes.'

Like *xiǎng* 'want', *huì* 'will' is also incompatible with a negated complement.[13] Accordingly, in (26b) and (27b) below negation cannot be syntactically construed with the complement *v*P:*S *huì* [Neg [ᵥP PP [ᵥP V O]]]. The parsing of negation as forming a constituent with the PP only: [ᵥP [Neg PP] V O] likewise fails, as corroborated by the impossibility of topicalizing the sequence 'Neg PP' in (26c) (also cf. [17], [18] above). As a result, (26b) and (27b) are rejected.

(26) a. *Tā bù [AuxP huì [ᵥP [PP wèi Měilì] dān xīn]]*
          3SG NEG   will   for Mary carry heart
          'He won't get worried about Mary.

      b. **Tā huì [[PP <u>bù</u> wèi Měilì] dān xīn]*
          3SG will   NEG for Mary carry heart

      c. **[PP <u>bù</u> wèi Měilì], tā huì dān xīn*
          NEG for Mary   3SG will carry heart

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13 Except in cases of double negation, *bù huì [bù VP]*, resulting in a high degree of assertiveness (cf. Lü Shuxiang 2000 [1980]: 297). Also note that the ban on a negated complement seems to be loosened in contrastive conjuncts; while (i) is unacceptable, (ii) provided by the reviewer is much better. Importantly, however, the negation in (ii) is syntactically construed with the entire verbal projection and does not form a constituent with the PP:

(i)   **Wǒ xiǎng [bù [ᵥP [PP wèi Měilì] dān xīn]]*
      1SG want NEG   for Mary carry heart

(ii) *Wǒ xiǎng [bù [ᵥP [PP wèi Měilì] dān xīn]], wǒ xiǎng wèi zìjǐ dān xīn*
      1SG want NEG   for Mary carry heart 1SG want for self carry heart
      'I don't want to worry about Mary, I want to worry about myself.'

(27) a. *Tā míngtiān <u>bù</u> [_{AuxP} huì [_{vP} [_{PP} xiàng wǒ] qiú   hūn]]*
         3SG tomorrow NEG   will   to   1SG request marriage
         'He will not propose to me tomorrow.'

      b. * *Tā míngtiān huì [_{vP} [_{PP} <u>bù</u> xiàng wǒ] qiú   hūn]*
         3SG tomorrow will   NEG to   1SG request marriage
         ('He will propose tomorrow, but not to me.')

The incompatibility of prepositions with adverbs and negation is the first piece of evidence in favour of the existence of the category preposition, irrespectively of whether there exists a homophonous verb or not. Note that this incompatibility holds for all positions examined so far, but is just more easily to detect for a PP in the sentence-initial topic position or contained in a complex DP, i.e. somewhere other than in the sentence-internal adjunct position.

3.3 Prepositional Phrases cannot function as predicates

The preceding discussion has demonstrated the incompatibility of PPs with negation and adverbs, thus showing them to be different from verbs. This incompatibility is a consequence of the fact that prepositions cannot function as predicates, neither as primary (cf. [28a] and [29a]) nor as secondary (cf. [28b] and [29b]). (For evidence that the constituents following the object NP in [28b]) and [29b] involve a predication on that object NP, not an NP-internal modifier exceptionally following the head noun in an otherwise head-final NP, cf. C.-T. James Huang 1984b, 1987.)

(28) a. * *Tā [_{PP} cóng Běijīng]*
         3SG   from Beijing

      b. *Tā yǒu jǐ   ge xuéshēng*
         3SG have several -CL student
         {[pro huì shuō zhōngwén] / *[_{PP} cóng Běijīng]}*
              can speak Chinese /   from Beijing
         'He has several students who can speak Chinese/
          several students from Beijing.'

      c. *Tā [_{vP} [_{PP} cóng Běijīng] [_{vP} huílái-le]]*
         3SG   from Beijing   return-PERF
         'He has returned from Beijing.'

(29)   a. **Zhèi běn shū [PP *guānyú Chomsky*]
         this CL book   about Chomsky
         (intended meaning: 'This book is about Chomsky.')

   b. *Tā yǒu yī běn shū {**[PP *guānyú Chomsky*]/*
         3SG have 1 CL book   about Chomsky /
         [vP *tándào Chomsky*]}
            talk.about Chomsky
         'He has a book about Chomsky/talking about Chomsky.'

Furthermore, as in English, a PP cannot be selected as complement by an auxiliary in Chinese, either:

(30)   **Zhèi běn shū [AuxP *huì* [PP *guānyú Chomsky*]
         this -CL book   will about Chomsky
         (Intended reading: 'This book will *(be) about Chomsky.')

(31)   **Wǒmen míngtiān [AuxP *yào* [PP *wàng Shànghǎi*]][14]
         1PL   tomorrow   want   towards Shanghai
         (Intended reading: We want *(to go) to Shanghai tomorrow.')

The non-predicational status of prepositions illustrated so far seems to be challenged by the claim often encountered in the literature that prepositions in Chinese *are* compatible with aspect suffixes (cf. among others C.-P. James Liang 1971, Li and Thompson 1981: 360, Ross 1991 for Mandarin as well as Francis and Matthews 2006 for Cantonese). However, this claim does not bear further scrutiny, because it can be shown to arise from the confusion between homophonous preposition and verb; the possibility to mark the *verb* in an adjunct clause with aspectual suffixes has been misinterpreted as an instance of the homophonous *preposition* displaying verbal characteristics. Also note that once again the alleged compatibility of prepositions with aspectual suffixes is observed only for the preverbal adjunct position, a point passing unnoticed and

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14 This sentence is also unacceptable with the verb *wǎng* 'go (in the direction of)' confirming the observation made above that *wǎng* is not on a par with the currently used verb *qù* 'go', but confined to verbal compounds and fixed expressions:

(i)   *Wǒmen míngtiān yào qù/*wǎng Shànghǎi*
         1PL   tomorrow want go/ go   Shanghai
         'We will go to Shanghai tomorrow.'

never commented upon by the proponents of a categorially dual, hybrid nature of Chinese prepositions.

Let us first look at the pair verb *gēn* 'follow' and preposition *gēn* 'with, to; from':

(32)   *Nǐ   gēn   -zhe tā*
        2SG follow-DUR 3SG
        'Follow him!'

(33)   *Wǒ [vP [PP gēn   tā][vP   shuō huà]]*
        1SG   with 3SG   talk word
        'I speak to him.'

(34)   *Wǒ [vP [P   gēn   tā][vP jiè   qián]]*
        1SG   from 3SG   borrow money
        'I borrow money from him.'

Only the verb *gēn* 'follow' is compatible with aspect (cf. [32]), but not the preposition *gen* 'with, to; from' (cf. [33] and [34]). Accordingly, when *gēn* in sentences (33) and (34) is suffixed with the durative aspect suffix *-zhe* (cf. [35a] and (35b)), it must be analysed as the verb 'to follow', i.e. in this case the adjoined phrase is not a PP, but an adjunct clause, and the interpretation changes accordingly, provided the sentence is acceptable at all:

(35)   a. #*Wǒ [vP [adj.clause pro gēn   -zhe tā] shuō huà]*
            1SG   follow-DUR 3SG talk word
            'I – doing as he does – talk.'

        b. * *Wǒ [vP [adj.clause pro gēn -zhe tā][vP jiè   qián]]*
            1SG   follow-DUR 3SG   borrow money

Note that some speakers reject both (35a) and (35b) without the *gēn*-PP indicating the interlocutor ('talk *to him*') or source ('borrow *from him*') and with an adjunct clause instead, the latter not being able to encode these roles. For those speakers who accept (35a) (hence the mark #) the verb *gēn* here must be understood in the figurative sense 'follow an example, do as somebody else does'.

By contrast, both groups of speakers accept sentences (36a) to (36c) with an adjunct clause containing the verb *gēn* 'follow' (in both the literal and the figurative sense), because they involve a matrix predicate that is complete and does not need to be supplemented with a role normally encoded by a *gēn*-PP:

(36) a. *Wǒ gēn -zhe tā jìn chéng*
   1SG follow-DUR 3SG enter city
   'Following him, I went downtown.'

  b. *Wǒ gēn -zhe tā zuò-le jǐ nián mǎimài*
   1SG follow-DUR 3SG do -PERF several year business
   'I have done business for several years following him,
    i.e. under his direction.'

  c. *Wǒ gēn -zhe tā xué qìgōng*
   1SG follow-DUR 3SG learn Qigong
   'I am learning Qigong following him, i.e. under his direction.'

Likewise, only the verb *gēn* can be suffixed with *-le* or *guo*. Note, though, that when a *gēn*-PP is replaced by a clause (with a null subject) containing the verb *gēn* 'follow', the resulting sentence is often rejected, because it leads at best to a nonsensical interpretation as in (37) (based on [33] and [34]), 'I have followed him (before) and talked/borrowed money':

(37) **Wǒ gēn -le /guo tā shuō huà / jiè qián*
   1SG follow-PERF/EXP 3SG talk word/ borrow money

Again, the confusion with respect to preposition or verb arises only in the pre-verbal adjunct position where both PPs and adjunct clauses can occur; but even in this structural context, substituting an adjunct clause with the verb *gēn* for a PP headed by *gēn* often leads to unacceptability.

In the topic position, we observe a very sharp contrast; while a *gēn* PP is perfectly acceptable here, a null subject clause with the verb *gēn* bearing one of the aspect suffixes is rejected:

(38) a. *[TopP [PP Gēn Amēi], [TP wǒ shuō zhōngwén hé yīngwén]],*
      with Amei 1SG speak Chinese and English
   [TopP [PP gēn Měilì], [TP wǒ zhǐ shuō yīngwén]
      with Mary 1SG only speak English
   'With Amei, I speak Chinese and English,
    with Mary, I only speak English.'

  b. *[TopP[PP Gēn Amēi], [TP wǒ jiè qián],*
      from Amei 1SG borrow money

[*TopP*[*PP* *gēn Měilì*], [*TP* *wǒ zhǐ jiè shū*]
from Mary   1SG only borrow book
'From Amei, I borrow money, from Mary, I only borrow books.'

(39)   *[*TopP*[*clause* *pro* [*vP* *gēn   -zhe/-le /-guo tā*]
follow-DUR/-PERF/-EXP 3SG
[*TP* *wǒ shuō huà / jiè   qián]]*
1SG talk word/ borrow money

In other words, for pairs of homophonous verb and preposition, it is only the verb that is compatible with aspectual suffixes. In order to see this, it is indispensable to control both for syntax (adjunct position vs other positions) and semantics, especially if the meanings of the preposition and of the homophonous verb are rather close, as in some of the examples involving the preposition *gēn* 'with' and the verb *gēn* 'follow (the example of)'.

The point just made that for a given pair of homophonous preposition and verb the presence of an aspect suffix involves the *verb* member can also be neatly illustrated with the pair verb *dào* 'arrive, go to' and preposition *dào* 'until, to'. The demonstration is more "straightforward" here because a clause with the verb *dào* is acceptable in topic position, due to lexical properties of *dào*.

The verb *dào* to be compared here with the preposition *dào* 'to, until' is the unaccusative verb *dào* 'X arrives' (whose unique internal argument can also be a temporal expression; cf. [40]) rather than the transitive verb *dào* 'go to, arrive at' requiring an animate subject and a place noun as object (cf. [41]):

(40)   a.   *Chūntiān zhōngyú dào -le*
spring   finally   arrive-PERF
'Spring has finally come.'

b.   *Dào -le   yī ge xīn de jiēduàn*
arrive-PERF 1 - CL new SUB phase
'A new phase has come.'

c.   *Zuótiān   dào -le   yī pī huò*
yesterday arrive-PERF 1 CL goods
'A batch of goods arrived yesterday.'

(41)   *Tā dào -le   Běijīng/ * chūntiān/*yī ge xīn de jiēduàn*
3SG arrive-PERF Beijing/ spring   /1 CL new SUB phase
'He has arrived at Beijing.'

As illustrated in (40a) to (40c), the unique argument NP of the unaccusative verb *dào* 'arrive' can either follow *dào* (i.e. remain in the verbal projection) or raise to the subject position (Spec, TP). In fact, in dependent clauses (i.e. adjunct clauses and clauses in topic position), the postverbal position is the default position:

(42) a. *[TopP [adj.clause Dào (-le) wǎnshàng][TP tā jiù kàn diànshì]]*
              arrive-PERF evening   3SG then watch television
        'When the evening has come, he watches TV.'

    b. *[TP Tā [[adj.clause dào (-le) wǎnshàng] [jiù [kàn diànshì]]]*
         3SG   arrive-PERF evening   then watch television
        'When the evening has come, he watches TV.'

(43) *{Dào (-le) xiàwǔ } wǒmen {dào (-le) xiàwǔ } zài tán ba*
     arrive-PERF afternoon 1PL   arrive-PERF afternoon then talk SFP
     'Let's talk about it in the afternoon then.'
     (Literally: '...when the afternoon has arrived')

As indicated by the acceptability of the perfective aspect suffix *-le, dào* in the adjunct clause is the verb *dào*, be it in a TP-external or TP-internal position.

    By contrast, the preposition *dào* 'to, until' is incompatible with *-le*:

(44) *Tā [PP dào(*-le) Shànghǎi] qu-le*
     3SG   to -PERF Shanghai go-PERF
     'He went to Shanghai.'

(45) a. *[TopP [dào-PP [cong-PP Cóng yī diǎn] dào(*-le) sān diǎn]]*
                  from 1 o'clock to -PERF 3   o'clock
        [TP tā shàng yīngwénkè]]
          3SG go   English.lesson
        'From one o'clock to three o'clock, he has his English lesson.'

    b. *[TP Tā [dào-PP [cong-PP cóng yī diǎn] dào(*-le) sān diǎn]]*
         3SG   from 1 o'clock to -PERF 3   o'clock
        [vP shàng yīngwénkè]]
          go   English.lesson
        'He has his English lesson from one o'clock to three o'clock.'

(46)   [_TopP_[_dào-PP_[_cong-PP_ *Cóng* [pro *kāishǐ shàng xué*]] [*dào(*-le) xiànzài*]]
                            from   start   go   school   until -PERF now
        [_TP_ *Xiǎo Huá yīzhí   chéngjī hěn hǎo*]]
            Xiao Hua always result   very good
        'From when she started school until now, Xiao Hua has always had
         good   results.'   (Lü Shuxiang 2000 [1980]: 130)

(47)   *Tā měitiān* [_dào-PP_[_cong-PP_ *cóng jiālǐ*] *dào(*-le) xuéxiào*]] *pǎo   sān gōnglǐ*
        3SG every.day   from home to -PERF school   run 3   km
        'Every day, he runs three kilometers from home to the school.'

Note that the *dào*-PP in preverbal position has a rather limited distribution. It occurs with the verbs *lái* 'come' and *qù* 'go' (cf. [44]) and then indicates direction (*dào* + place noun); elsewhere, it requires the presence of a *cóng* PP as modifier in its specifier position, thus indicating a time span (cf. [45], [46]) or a path between two locations (cf. [47]) 'from X to Y'. Only in the latter case is the *dào*-PP acceptable in the topic position, because with verbs of direction the *dào*-PP in fact has argument status and must occur within the sentence (TP), i.e. to the right of the subject.[15]

Interestingly, this makes *dào* the only preposition to my knowledge that is not "degenerate" in the sense of Huang (1982: 27, 61), who points out that prepositions in Chinese lack a specifier position to host modifiers. Consequently, according to Huang, Chinese has no equivalents for English PPs of the format in (48):

(48)   [_PP_ *very* [_P'_ *near* [_NP_ *the house*]]   (Bresnan 1976)

The examples (45) to (47), however, show exactly this structure, *modulo* the fact that the modifier in the specifier position of the PP headed by *dào* is a PP itself, indicating the starting point (cf. chapter 4.4.3 below for further discussion):

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15 The same holds for the *cóng*-PP, which is confined to the sentence-internal preverbal position with verbs such as *lái* 'come', *chūfā* 'start out' (cf. [i]), but acceptable in the sentence-initial topic position when the verb does not select a source-PP as argument (cf. [ii]):

(i)   (*[_PP_ *cóng nóngcūn*]) [_TP_ *Tā gāngcái* [_PP_ *cóng nóngcūn*] *huílai-le*
            from village   3SG just   from village   return-PERF
        'He has just returned from the village.'

(ii)   {*cóng zhèr*} [_TP_ *Nǐ { cóng zhèr*} *wàng   nán   zǒu*]
         from here   2SG   from here   toward south go
        'From here, you go toward the south.'

(49)   [*dàoPP* [*cóng* NP] [*dàoP*   *dào* NP]]
                from   to

Whether this exceptional property of the preposition *dào* 'until' is due to its having been reanalysed from an unaccusative verb remains to be investigated.

To conclude, as demonstrated by the in-depth discussion of the two verb-preposition pairs *gēn* and *dào*, the defining characteristic of prepositions distinguishing them from verbs, viz. the impossibility of functioning as a predicate, has a number of syntactic and semantic consequences. Previous studies have neither paid enough attention to the distributional differences between PPs and clauses with the homophonous verb nor to the corresponding semantic differences. In other words, the minute comparison of verb *gēn* and preposition *gēn* as well as verb *dào* and preposition *dào* undertaken above could be repeated for every homophonous verb-preposition pair and would provide numerous differences ultimately reducible to the categorial dichotomy verb vs preposition.

3.4 Ban on preposition stranding

3.4.1 PPs in the preverbal adjunct position

In Chinese as in many other languages prepositions – unlike verbs – require their complement to be overt. Accordingly, the complement cannot be a null pronoun whose content is recoverable from the context (cf. [50]), nor an empty category resulting from the movement of the complement (cf. [52]).

(50)   *Tā   měitiān* [*vP* [*PreP*   *zài jiā*][*vP* *shuì   wǔjiào*]],
         3SG every.day   at   home sleep nap
         wǒ yě   měitiān [*vP* [*PreP* *zài* *(jiā)*] [*vP* *shuì   wǔjiào*]].
         3SG also every.day   at   home   sleep   nap
         'He takes a nap at home every day,
          I also take a nap at home every day.'

(51)   *Wǒ gāngcái qù-le   yī tàng, tā   méi* [*vP* *zài (jiā)*]
         1SG just   go-PERF 1 time 3SG NEG   be home
         'I just went there, he wasn't at home/he wasn't in.'

While for the verb *zài* 'to be at' in (51) the presence of the object *jiā* 'home' is optional, the preposition *zài* 'at' obligatorily requires its complement to be pre-

sent, even if it is redundant from an informational point of view, because mentioned in the immediately preceding sentence in (50).

Huang C.-T. James (1982) illustrated this *ban on preposition stranding* with examples involving movement of the preposition's complement, i.e. relativization (cf. [52a]) and topicalization (cf. [52b]):

(52) a. *$[_{NP} [_{TP}$ *wǒ* $[_{vP}[_{PreP}$ *gēn* $[e]_i][_{vP}$ *bù shóu* $]]]$ *de] nèi ge rén_i]*
                1SG   with   NEG familiar SUB that CL person
        ('the person I'm not familiar with')

   b. *$Zhāngsān_i$ $[_{TP}$ *wǒ* $[_{PreP}$ *gēn* $[e]_i]$ *bù shóu]*
       Zhangsan   1SG   with   NEG familiar
       ('Zhangsan, I'm not familiar with.')
                    (C.-T. James Huang 1982: 499; [109a-b]; bracketing added)

However, since in both examples the PP occupies the preverbal adjunct position, the ungrammaticality observed in (52a) and (52b) can in principle also be the result of the *Adjunct Island Constraint* (AIC) excluding extraction from an adjunct, subsumed by C.-T. James Huang (1982: 503) under the *Condition on Extraction Domain* (CED). In other words, the object of a *verb* in an adjunct clause cannot be extracted, either, and accordingly, the adjunct position is not a diagnostic context to distinguish between verbs and prepositions with respect to extractability of their complement (cf. Law 1996, section 2.3 for further discussion). The same caveat applies to McCawley (1992) who also uses the impossibility to extract the complement of a preposition as evidence for the verb vs preposition distinction, without paying attention to the fact that his ungrammatical exemples all involve extraction from a PP in the preverbal adjunct position.

While it is indeed difficult to determine whether sentences of the type illustrated in (52a) and (52b) are unacceptable because of the AIC/CED or rather due to the ban on preposition stranding, the latter should however not be discarded as a diagnostic for the distinction between verbs and prepositions (*contra* Ross 1991). Examples such as (50) are important here, because no extraction and hence no potential violation of an island constraint is involved. Instead, we have a conjoined structure where the referent of the null pronoun after the preposition *zài* 'in, at' in the second conjunct is in fact easily recoverable from the first conjunct; the fact that the null pronoun is nevertheless excluded here demonstrates the failure of prepositions to act as "proper governors", i.e. to license an empty category. In addition, the complement of a preposition cannot be extracted, either, "even" if the PP in question is not within an island, but

occupies the postverbal argument position (cf. section 3.4.2 immediately be-low). As a consequence, the ban on adposition stranding or rather the require-ment that the complement of a preposition must be overt remains a valid diag-nostic, not only to distinguish between verbs and prepositions, but also to distinguish between nouns and postpositions (cf. chapter four below). Impor-tantly, postpositions are never taken into account by studies discussing the (non-)existence of the category preposition in Chinese, and Ross (1991) is not an exception here, either. Her proposal to dismiss the ban on preposition stranding as a criterion for Chinese must fail because *inter alia* she does not see that post-positions, on a par with prepositions, preclude a covert complement.[16]

3.4.2 PPs in postverbal argument position

What about extraction from PPs occurring in other positions where no inde-pendent constraint such as the AIC/CED intervenes? PPs in topic position can-not serve as test ground, because it is unclear what position the extracted com-plement should raise to. There only remains the postverbal position, which – as pointed out in chapter two – is reserved for arguments. As a result, the set of prepositions acceptable here is confined to *gěi* 'to, for', *zài* 'at, in', and *dào* 'to, until' (also cf. Ernst 1989:123).

(53) a. *Tā   mài-le   yī ge shǒubiǎo [PP gěi(*-le) Měilì]*
      3SG sell-PERF 1 CL watch   to -PERF Mary
      'He sold a watch to Mary.'

   b. *Tā   dǎ -le   jǐ   cì   diànhuà [PP gěi(*-le) péngyou]*
      3SG strike-PERF several time phone   to -PERF friend
      'She phoned her friends several times.'

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16 Ross's (1991) main argument against the ban on preposition stranding as a viable criterion in Chinese and hence against prepositions as a distinct category is the fact that verbs such as *ràng* 'make someone do something' always require their complements. This, however, only shows that the implicational relation between P-status and ban on stranding exclusively works in one way: when a given item is a preposition, it disallows stranding. But the reverse is not true, i.e. items requiring their complement are not automatically prepositions. In addition, this verb-based argument cannot be carried over to postpositions reanalysed from nouns. But even if Chinese lacked postpositions, her reasoning would still fall through, because among other things a given preposition must be compared with the homophonous verb (provided it exists), not with a completely different (control) verb.

    c.   *Tā jì -le   yī ge bāoguǒ [PP gěi(*-le) Měilì]*
          3SG send-PERF 1 CL parcel   to -PERF Mary
          'He sent a parcel to Mary.'

(54) a.   *Tā fàng-le   yī ge xiāngzi [PP zài(*-le) zhuōzi shàng]*[17]
          3SG put -PERF 1 CL box   in -PERF table   on
          'He put a box on the table.'

    b.   *Nǐ xiě jǐ   ge zì   zài(*-le) bĕnzi   shàng*
          2SG write several CL character in -PERF notebook on
          'Write down several characters into your notebook.'

    c.   *Tā   diū -le shénme zài(*-le) chē shàng ?*
          3SG lose-PERF what   in -PERF   car on
          'What did he leave in the car?

(55) a.   *Tā dǎ -le   jǐ   cì   diànhuà [PP dào (*-le) bàngōngshì*
          3SG strike-PERF several time phone   to -PERF office
          'She called the office several times.'

    b.   *Tā jì -le   yī ge bāoguǒ [PP dào (*-le) Shànghǎi]*
          3SG send-PERF 1 CL parcel   to -PERF Shanghai
          'He sent a parcel to Shanghai.'

The verbs in (53) to (55) select a goal PP in addition to the theme NP; as already shown above, the prepositions are incompatible with aspect suffixes.[18] As to be expected, topicalization of the complement of the PP leaving an empty category (trace/copy) behind results in ungrammaticality:

(55)   * *[TopP Měilì_i [TP wǒ mài-le   yī ge shǒubiǎo [PP gěi [e]_i]]]*
          Mary   1SG sell-PERF 1 CL watch   to

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17 For some speakers from the North, this structure is marginal, while speakers from the South accept it without problems. Note that the structure 'V NP *zài* NP' requires an indefinite object of the form 'Quantifier-Classifier NP' (cf. Lü Shuxiang 2000 [1980]: 646):

(i)   *Nǐ xiě *(yī ge) míngzi zài shàngtóu*
     2SG write 1 CL name in top
     'Write a name on the top.'

For completeness sake, *zài(*-le)* is given, although the verb *zài* is also incompatible with *-le*.
18 This incompatibility was double-checked, given that the reviewer accepted *gĕi-le* in (53).

(56)   *[$_{TopP}$[*Zhuōzi shàng*]$_i$ [$_{TP}$ *tā fàng-le yī ge xiāngzi* [$_{PP}$ *zài* [e]$_i$]]]
        table   on   3SG put -PERF 1 CL box   in

(57)   *[$_{TopP}$ [*Tā de bàngōngshì*]$_i$
          3SG SUB office
        [$_{TP}$ *tā dǎ -le jǐ cì diànhuà* [$_{PP}$ *dào* [e]$_i$]]]
          3SG strike-PERF several time phone   to

Since in principle nothing rules out extraction from an argument position within the verbal projection, the ungrammaticality of (55) to (57) must be due to the ban on preposition stranding. These extraction data thus tie in with the observation made above (cf. [50]) that a preposition in Chinese requires an overt complement, to the exclusion of *in situ* null pronouns as complements.

Besides providing an additional test context to confirm the validity of the ban on preposition stranding in Chinese, examples (53) to (55) above also illustrate the acceptability of PPs in postverbal position. This is important insofar as Huang, Li and Li (2009: 31) postulate an "independent requirement in Modern Chinese that within a clause, a preposition does not ever occur after a verb. In the absence of counterexamples, we extend the same conclusion [as obtained for *gěi* 'to, for'; WP] to other members of class (42c) such as *zài* and *xiàng*."[19] In other words, they consider *gěi* in 'V NP [gěi NP]' (cf. [53] above) as a verb, thus adopting Y.-H. Audrey Li's (1990: 110) viewpoint; they do not give any indication, though, as to the exact type and size of the projection (e.g. VP, *v*P or a clause with a null subject) containing the alleged verb *gěi*, nor do they mention the unacceptability of the aspect suffix on *gěi* here. Furthermore, under their verbal analysis of *geǐ* the ban on extraction of the goal NP in the structure 'V NP [gěi NP]' remains mysterious, another issue not addressed at all.

By contrast, an analysis of the projections headed by *gěi* 'to, for', *zài* 'in', and *dào* 'to, until' as PPs is compatible with the observations above and also allows us to straightforwardly account for the "subcategorizing" effect of these PPs, another point neglected by Huang, Li and Li (2009). As a matter of fact, the dependance of a postverbal PP (headed by *gěi*, *zài* or *dào*) on the verb, i.e. its status as an argument selected by the verb, has long been known in the litera-

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19 Note that Huang, Li and Li (2009: 29–32) concentrate on postverbal *gěi* and do not examine the corresponding structures 'V NP [zài/dào NP]' with a postverbal PP headed by *zài* 'in' or *dào* 'to'. If they had done so, they would have seen even more clearly that a verbal analysis leads to implausible interpretations, *viz.* 'She made several phone calls and gave to her friends' for (53b), 'What did he leave and was in the car?' for (54c), and 'He sent a parcel and arrived at Shanghai' for (55b).

ture (cf. among others Teng Shou-hsin 1975, Zhu Dexi 1979, 1983). Thus, donatory double object verbs *par excellence* such as *mài* 'sell', *huán* 'give back', but also donatory double object verbs "by extension" such as *jì* 'send', *dǎ diànhuà* 'make a phone call' select a *gěi*-PP as goal (cf. [53b], repeated in [58] below); they contrast with simple transitive verbs such as *chàng gē* 'sing a song', which do not select a goal and for which accordingly a postverbal *gěi*-PP is excluded:

(58) *Tā dǎ -le   jǐ   cì   diànhuà [PP gěi péngyou]*
      3SG strike-PERF several time phone   to friend
      'She phoned her friends several times.'

(59) a. **Tā chàng ge gē   [PP gěi péngyou]*
         3SG sing   CL song   to friend

      b. *Tā [PP gěi péngyou] chàng ge gē*
         3SG   to friend   sing CL song
         'He sings a song for his friends.'

By contrast, a *gěi*-PP in the preverbal adjunct position indicating the benefactive is perfectly acceptable for *chàng gē* 'sing a song' (cf. [59b]). Note in this context that the benefactive is disallowed in the postverbal position, the latter being reserved for arguments.

The item *gěi* has been in the centre of the debate on the verb vs preposition distinction due to its occurrence in as many as three different structures involving donatory verbs. The dative construction 'V DO *gěi* IO' in (53a) above is one of them (repeated in [60a] below for convenience). A small subclass of donatory verbs by extension also allows for the goal to be encoded by a *gěi*-PP in preverbal position (cf. [61]). Last, but not least, *gěi* combines with donatory verbs to form what on the surface looks like a verbal compound 'V-*gěi*':

(60) a. *Tā mài-le   yī ge shǒubiǎo [PP gěi Měilì]*
         3SG sell-PERF 1 CL watch   to Mary
         'He sold a watch to Mary.'

      b. *Tā jì -le   yī ge bāoguǒ [PP gěi Měilì]*
         3SG send-PERF 1 CL parcel   to Mary
         'He sent a parcel to Mary.'

(61) *Tā [PP gěi Měilì] jì -le   yī ge bāoguǒ*
      3SG   to Mary   send-PERF 1 CL parcel

'He sent a parcel to Mary.'

(62)   *Tā   mài-gěi-le   Měilì   yī ge   shǒubiǎo*
       3SG   sell-GEI-PERF   Mary   1 CL   watch
       'He sold Mary a watch.'

Although this is not the place for an in-depth discussion of the double object construction in Chinese (cf. Paul and Whitman 2010 and references therein), some basic issues need to be addressed here, because they directly concern the categorial analysis of *gěi*.

As repeatedly observed above, *gěi* in the dative construction (cf. [60]) is a preposition and therefore incompatible with aspect suffixes. In addition, *gěi* can only take one complement, as expected for a preposition, and not two, as should be the case for the verb *gěi* 'give'. *Gěi* in (61) is a PP as well. A preverbal *gěi*-PP is in principle compatible with all kinds of activity verbs allowing a benefactive. As a result, with the subset of donatory verbs by extension where the goal can also be encoded by a *gěi*-PP in preverbal position, this preverbal *gěi*-PP is ambiguous between a goal and a benefactive reading. *Gěi* in 'V-*gěi*' (cf. [62]) finally is neither a verb nor a preposition, but the realization of the head *Applicative* (in the spirit of Pylkkänen 2002, 2008). As discussed in chapter 2.2.2.3 above, the functional head Appl° selects a VP headed by a donatory verb. The goal NP is attracted to Spec,ApplP; the verb raises and adjoins to the left of Appl° forming the sequence 'V-*gěi*', which further raises to Asp° (if projected), resulting in 'V-*gěi*-Asp':

(63)   *Tā* [$_{AspP}$ *mài-gěi-le* [$_{ApplP}$ *Měilì* [$_{Appl'}$ *t$_{mài-gěi}$* [$_{VP}$ *t$_{Měilì}$* [$_{V'}$ *t$_{mài}$* *shǒubiǎo*]]]]]
       3SG   sell-GEI-PERF   Mary   watch

In other words, the sequence 'V-*gěi*' is not a V-V compound formed in the lexicon, but is built in syntax, as visible in the formation of A-*not*-A questions and in verb copying, where it behaves unlike lexical V-V compounds such as *xǐ-huān* 'like' (cf. chapter 2.2.2.3 above).

By contrast, Y.-H. Audrey Li (1990: 103–110) opts for a verbal analysis of *gěi* in both the applicative structure 'V-*gěi* IO DO' and the dative construction 'V DO *gěi* IO' in order to capture the semantic component of "transfer", which for her is associated with the verbal semantics 'give' of *gěi*.[20] Since a song can-

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20 Y.-H. Audrey Li (1990: 101, 105) admits PP status only for the preverbal *gěi*-PP encoding the goal with donatory verbs by extension as in (61) above (also cf. Huang, Li and Li 2009: 31).

not be transferred, so her reasoning goes, this correctly predicts the unacceptability of (59a) above **chàng ge gē [gěi péngyou]* 'sing a song for friends'. However, given that the verb *gěi* 'give' does allow for abstract direct objects (cf. [64]), it is not so much the non-transferrable nature of *gē* 'song' which is at stake here, but rather the fact that a benefactive *gěi*-PP is barred from postverbal position in general, *chàng (gē)* 'sing' not selecting a goal. In this respect, it clearly contrasts with *dǎ diànhuà* 'make a phone call' selecting a goal PP and hence acceptable in the dative construction, "despite" the abstract nature of *diànhuà* (cf. [65]):

(64) a. *Tā gěi -le   wǒ yī ge hěn hǎo de yìnxiàng*
          3SG give-PERF 1SG 1 CL   very good SUB impression
          'She made a very good impression on me.'

      b. *Tā zhèi cì   gěi -le   wǒ hěn dà de bāngzhù*
          3SG this time give-PERF 1SG very big SUB help
          'She gave me a lot of help this time.'

(65)   *Tā dǎ -le   jǐ   cì   diànhuà [PP gěi péngyou]*
          3SG strike-PERF several time phone   to   friend
          'She phoned her friends several times.'

In brief, the presence of the semantic component of transfer is not linked to the verbal status of *gěi*, as also witnessed by the generally accepted analysis of preverbal *gěi* encoding the goal as a preposition (cf. [61] above).

An overall verbal analysis of postverbal *gěi* (be it the preposition or the realization of Appl°) is also claimed to have the advantage that it can predict the correlation between the well-formedness of 'V DO *gěi* IO' and 'V-*gěi* IO DO'; this correlation is said to be missed in the approach defended here where *gěi* in the dative construction is a preposition and the immediately verb-adjacent *gěi* the realization of Appl°. However, while indeed in many cases verbs that allow for one structure also allow for the other as in the case of *mài* 'sell' (cf. [60a] and [62] above), this is not always the case.

(66) a. *Wǒ qī   yī bēi chá [PP gěi tā]*
          1SG brew 1 cup tea   to 3SG
          'I made a cup of tea for him.'

      b. #*Wǒ qī   -gěi tā yī bēi chá*
          1SG brew-GEI 3SG 1 cup tea
          'I made him a cup of tea.'

While all speakers accept the dative construction in (66a), the judgements for (66b) differ (hence #), reflecting the (im)possibility for a given speaker of analysing *qí chá* 'make tea' as a donatory verb (by extension), i.e. as a verb selecting a goal PP. In general, in Chinese as in English there exists no derivational relationship between the double object construction 'V IO DO' and the dative construction 'V DO to IO' (cf. Paul and Whitman 2010 for Chinese, and Oehrle 1976, Stowell 1982, Emonds and Whitney 2006 for English).

In any case, as noted at the beginning of section 3.4.2 above, the structure with a postverbal PP 'V NP PP' is not restricted to *gěi*, but is also available for the prepositions *zài* 'in, at' and *dào* 'to' (with place nouns). Importantly, there is no "alternative" structure of the form 'V-zài/dào NP NP' for *zài* and *dào*:

(67) a. *Tā fàng-le yī ge xiāngzi [*PP* zài zhuōzi shàng]*
          3SG put -PERF 1 CL box   in table   on
          'He put a box on the table.'   (=[54] above)

      b. * *Tā fàng-zài-le zhuōzi shàng yī ge xiāngzi*
          3SG put-ZAI-PERF table   on   1 CL box

(68) a. *Tā dǎ -le   jǐ   cì   diànhuà [*PP* dào bàngōngshì]*
          3SG strike-PERF several time phone   to   office
          'She called the office several times.'   (=[55] above)

      b. * *Tā dǎ -dào-le   bàngōngshì jǐ   cì   diànhuà*
          3SG strike-DAO-PERF office   several time phone

(67b) and (68b) are ill-formed because neither *zài* nor *dào* realize Appl°, i.e. there is no additional layer above the VP the verb could raise to. The non-existence of 'V-zài/dào NP NP' supports the non-uniform analysis of postverbal *gěi* (Appl° in 'V-gěi IO DO' vs preposition in 'V DO gěi IO'); it also demonstrates that the class of verbs selecting a goal PP is larger than the class of (donatory) verbs selected as complement by the higher head Appl°.

The data in (69) and (70) below involving a PP headed by *zài* confirm that a postverbal PP is only allowed when selected by the verb:

(69) *Nǐ xiě jǐ   ge zì   zài běnzi   shàng*
      2SG write several CL character in notebook on
      'Write down several characters into your notebook.'

(70) a. * *Tā chāo-xiě   liǎng ge shēngzì [*PP* zài běnzi shàng]*
          3SG copy-write 2   CL new.word   in book on

b. *Tā [_{PP} zài běnzi shàng] chāo-xiě   liǎng ge shēngzì*
   3SG   in book on   copy-write 2   CL new.word
   'He copied two new words in his notebook.'
   (Zhang Cheng 1997: 45)

While *xiě* 'write' can select a *zài*-PP as additional (location) argument (cf. [69]), the compound verb *chāo-xiě* 'copy-write' = 'to copy' does not, as witnessed by the unacceptability of a postverbal *zài*-PP in (70a). The same *zài*-PP is, however, acceptable in the preverbal adjunct position (cf. [70b]). This illustrates the same phenomenon as in (59) above, where *chàng gē* 'sing a song' is compatible with a preverbal benefactive *gěi*-PP, but not with a postverbal goal *gěi*-PP.

3.5 Interim summary

The preceding sections have established the existence of the category preposition in Chinese as distinct from that of verbs. This result is not surprising insofar as it confirms, although in a more explicit fashion, Chao Yuen Ren's (1968) stand on that issue. In fact, although in section 8.2.1 on *Prepositions as a separate word class* Chao Yuen Ren (1968: 749) alternates the terms of *coverb* and *preposition*, in section 8.2.2 he nonetheless provides what he explicitly calls the *formal features of prepositions* (Chao Yuen Ren 1968: 749) and distinguishes them from verbs. Prepositions are not compatible with aspect (p. 749–750), they cannot function as predicates (p. 750), and unlike verbs cannot omit their object (p. 751). Finally, concerning the numerous verb – preposition pairs which have caused so much confusion in Chinese linguistics, Chao Yuen Ren (1968: 761) has no qualms treating them as what they are, viz. as *homophone-homographs*, even if he seems to reserve this point of view for those pairs where the meaning difference between the verb and the "corresponding" preposition is considerable.

In addition to the criteria already used by Chao Yuen Ren (1968), we have seen that distributionwise PPs do not pattern with VPs, but with NPs, i.e. they show the same positional argument/adjunct asymmetry as NPs. Consequently, a PP occupies a postverbal position only when it is an argument selected by a verb; otherwise it occurs in the preverbal adjunct position to the right or to the left of the subject. This distribution would be very difficult to account for in a scenario where prepositions are a kind of verb with a categorially dual, hybrid status. In the same vein, the diverging selectional restrictions displayed by the homophonous verb and preposition in a given pair likewise argue against any conflation of these categories. This is particularly obvious in the case of the verb *gěi* and the preposition *gěi*; while *gěi* 'give' as a double object verb verb selects

both a theme argument and a recipient argument, the "corresponding" preposition *gěi* 'to, for' only has one complement, as do all the other prepositions

As already briefly alluded to in section 3.1 above, the existence of postpositions in Chinese (cf. chapter four below) renders futile any attempt to try to dispense with the category preposition in order to "economize" on the category adposition altogether. Furthermore, even if one somehow succeeded in doing without with the category adposition, this would not solve the general dilemma at the origin of the hesitation concerning homophonous verb-preposition pairs in Chinese, i.e. how to deal with homophonous items of different categorial nature. As a matter of fact, verb and preposition are not the only categories with homophonous members; as seen in (1a) and (1b) above, the prepositions *hé* 'with' and *gēn* 'with', for example, are homophonous with the coordinating conjunctions *hé* 'and' and *gēn* 'and'. Furthermore, besides the verb *zài* 'be at' and the preposition *zài* 'in' there also exists the aspectual head *zài* selecting a VP. Finally, in addition to the verb *gěi* 'give' and the preposition *gěi* 'to, for', several other categorially different items *gěi* must be taken into account, among them the applicative head *gěi*. In brief, there is no way to avoid the existence of homophonous items instantiating different categories. The pairs of homophonous verbs and prepositions illustrate just one such case.

3.6 Prepositions and diachrony

Studies assigning a categorially dual, hybrid status to Chinese prepositions invariably evoke their "verbal origin", without however spelling out how such historical information available only to the specialist in diachronic syntax can be accessible to the child acquirer and the native speaker of today and constitute part of her/his synchronic grammar. Echoing a widely accepted view, Huang, Li and Li (2009: 26), for example, state: "The class of prepositions is one of the most poorly defined categories in Chinese, due to the fact[s] that the so-called prepositions in the language all have their historical origins as verbs [...]" Moreover, if we take the statement about the verbal origin of *all* prepositions as holding for the *attested* history of Chinese, it turns out to be simply wrong.

In the earliest documents from pre-Archaic Chinese, i.e. the Shang inscriptions (13th c. BC – 11th c. BC), we find the three prepositions *zì* 'from', *yú* 'at, to' and *zài* 'in', where *yú* and *zì* are exclusive prepositions without a homophonous

verbal "counterpart".[21] In other words, an item can start out as a preposition without necessarily resulting from the reanalysis of a verb, even though verb-to-preposition reanalysis naturally is a frequent source for prepositions in Chinese (cf. Djamouri and Paul 1997, 2009; Whitman 2000 and references therein).

This section first discusses briefly the arguments in favour of the prepositional status of *zì* 'from', *yú* 'at, to' and *zài* 'in' in the Shang inscriptions. (Note that they were already listed as prepositions by Chen Mengjia [1956: 123].) It further shows that the set of properties characterizing prepositions in modern Mandarin likewise holds for these three prepositions, irrespectively of whether there exists a homophonous verb (as in the case of *zài*) or not. It then examines in detail a concrete case of V-to-P reanalysis, paying particular attention to the structural context in which reanalysis can occur and the constraints applying here. The section concludes with an assessment of general claims about V-to-P reanalysis (cf. among others Longobardi 2001, Roberts and Roussou 2003), against the background of the results obtained in Chinese.

As in modern Mandarin, PPs in the Shang inscriptions pattern with NPs, not with VPs. When an argument, a PP must occupy the postverbal position, as illustrated below for the (abstract location) PP selected by the verb *lù* 'abound' in (71) and the recipient PP of donatory verbs in (72) to (74). Importantly, all three prepositions can head the recipient PP in a double object construction, which is clearly incompatible with a verbal analysis.[22] Note that there is no

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21 While Djamouri (1988) and Djamouri and Paul (1997, 2009) state that only the preposition *zài*, but not the verb *zài*, is attested in the Shang inscriptions, new evidence suggests that the verb *zài* exists in the Shang inscriptions as well (Djamouri, p.c.).

22 Given that the proponents of a verbal interpretation of these prepositions concentrate on spatial location and never take into account temporal and abstract location, the examples provided involve these latter two, where possible. The cases of temporal and abstract location are important, because here the translation, using a verb, the only "argument" provided in favour of verbal status, is excluded (cf. [ii]), whereas it is in principle possible for a spatial locative (cf. [i]) – provided there exists a homophonous verb – and then in preverbal adjunct position only, another point completely neglected:

(i) 王在師稻豢 (*Heji* 24255)
     Wáng [$_{vP}$[$_{PPspat.}$ zài shī Dào] huàn]
     king   at camp Dao raise
     'The king at the camp Dao/being at the camp Dao will raise [animals].'

(ii) 子商亡斷在祸 (*Heji* 02940)
     Zǐ   Shāng [$_{vP}$ wáng   duàn [$_{PPabstr.}$ zài huò]]
     prince Shang   have.not end   in misfortune
     'The prince Shang will not end in misfortune.'
     (Not: 'The prince will not end [and] be in misfortune.')

evidence for the verbs *yú* and *zì* in the entire history of Chinese (*contra* among others Pulleyblank 1995, Mei Tsu-lin 2004, Guo Xiliang 1997, 2005).

(71)   婦妌魯于黍年   (*Heji* 10132 recto)
       Fù   Jìng [vP lǔ   [PPabst.loc yú   shǔ   nián]]
       lady Jing   abound   in millet harvest
       'Lady Jing will abound in the millet harvest.'

(72)   王其侑于小乙羌五人   (*Heji* 26922)
       Wáng qí [vP yòu [PPgoal yú   Xiǎoyǐ][NP Qiāng   wǔ rén]]
       king FUT offer   to Xiaoyi   qiang   five man
       'The king will offer Xiaoyi five Qiang tribesmen.'

(73)   其侑在父庚   (W 1374)
       [TP pro [vP Qí   yòu   [PPgoal zài fù   Gēng]]
                    FUT offer   to father Geng
       'One will offer [the sacrifice] to Father Geng.'

(74)   其登鬯自小乙
       [TP pro [vP qí [dēng   [NP chàng   ] [PPgoal zì   Xiǎoyǐ]]]
                   FUT elevate.in.sacrifice millet.alcohol   from Xiaoyi
       'One will sacrifice millet alcohol to (a whole genealogy of ancestors
        starting from) the ancestor Xiaoyi.'
       (*Heji* 27349)

Argument PPs – like argument NPs – only occur in a sentence-internal preverbal position when focalized. As pointed out in chapter 2.1.2 above, the relevant focus pattern in the Shang inscriptions is restricted to a type of cleft construction akin to modern Mandarin *shi...de* clefts (cf. Paul and Whitman 2008):

(75)   a.   王侑歲于祖乙   (*Heji* 3213)
            Wáng   yòu   suì   [PP yú Zǔyǐ]
            king   present immolation   to Zuyi
            'The king will present an immolation sacrifice to Zuyi.'

       b.   于父丁侑歲   (*Heji* 3213)
            [[PP Yú Fùdīng][vP yòu   suì   ]]]
                 to Fuding   present immolation
            'It is to Fuding that [the king] will present an immolation sacrifice.'

(75b) is the matching sentence for (75a), i.e. it shares with it the presupposition – 'the king will present an immolation' – but varies on the recipient PP, which is focalized: *yú Fuding* 'to Fuding' (vs *yú Zǔyǐ* 'to Zuyi' in [75a]).

When adjuncts, PPs – like NPs – can occur in three positions, i.e. preverbally to the right and the left of the subject as well as postverbally. Recall that in contrast to modern Mandarin, adjuncts *were* allowed in the postverbal position in the Shang inscriptions. (Cf. chapter 2.1.1. above for the distributional parallel between adjunct NPs and PPs.)

Let us start with the sentence-internal preverbal adjunct position:

(76) 王在十二月在 卜   (*Heji* 24237)
Wáng [vP [PP zài shí'èr -yuè][vP [PP zài Xiāng][vP bǔ]]]
king   at twelve-month   at Xiang   divine
'The king in the twelfth month made the divination at Xiang.'

(76) illustrates a case with two adjunct PPs both headed by *zài* 'at' and indicating a temporal and a spatial locative, respectively.

(77) 王于七月入于商   (*Heji* 7780 r.)
Wáng [vP [PPtemp. yú qī -yuè] [vP rù [PPspat. yú Shāng]]
king   in seven-month enter   in Shang
'The king in the seventh month will enter the Shang city.'

In (77), *yú qī-yuè* 'in the seventh month' is an adjunct, while the postverbal PP *yú Shāng* 'in the Shang city' is the location argument of the verb *rù* 'enter'.

Adjunct PPs are likewise acceptable in sentence-initial position:

(78) 在 王其先遘捍   (*Ying* 593)
[PP Zài Nǚ] wáng qí xiān gòu hàn
     at Nü king FUT advance meet opposition
'At Nü, the king will advance and meet an armed opposition.'

(79) 自旦至食日不雨   (TUNNAN 42)
[PP Zì dàn] zhì shírì   bù yǔ
     from dawn until mealtime NEG rain
'From dawn to mealtime, it will not rain.' [23]

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23 The PP *zì dàn* 'from dawn' is probably to be analysed as a modifier in the specifier position of the PP headed by *zhì* 'until', akin to the analysis [dào-PP [cong-PP *cóng* NP] *dào* NP]] proposed

Finally, adjunct PPs also occur in the postverbal position:

(80) 乎多犬网鹿于龒   (*Heji* 10976 r.*)*
      Hū   duō   quǎn   [pro [_{vP} *wǎng lù*   [_{PP} *yú Nóng*]]]
      order   numerous   dog.officer   net   deer   at   Nong
      'Call upon the many dog-officers to net deer at Nong.'

(81) 乞令吳以多馬亞省在南   (*Heji* 564 r.)
      Qì lìng   Wú yǐ   duō   mǎyǎ   [_{vP} *xǐng* [_{PP} *zài nán*]]
      Qi order Wu lead numerous   military.officer   inspect   in   south
      'Officer Qi will order Wu to lead the numerous military officers
       to carry out an inspection in the south.'

(82) 昃允雨自西   (*Heji 20965*)
      Zè   yǔn   yǔ [_{PP} *zì   xī*]
      evening effectively rain   from west
      'In the evening effectively it rained from the west.'

In both (80) and (81), the postverbal adjunct PP is contained in the clausal com-
plement of a verb (*hū* 'order' and *yǐ* 'lead', respectively). Finally, (82) illustrates
a sentence with an adjunct NP *zè* 'evening' in sentence-initial position and the
adjunct PP *zì xī* 'from the west' in postverbal position.

The distributional parallel between PPs and NPs demonstrated above is one
argument in favour of the prepositional status of *yú* 'in, to', *zài* 'in' and *zì* 'from'.
Furthermore, no examples are attested where the prepositions *yú* and *zì* lack a
complement, which suggests that the ban on preposition stranding holds for the
Shang inscriptions as well. (While for the exclusive prepositions *yú* and *zì* this
ban is observable on the surface, a more in-depth examination is required for
the preposition *zài*, due to the existence of the verb *zài*.) Finally, PPs cannot
function as predicate, as witnessed by the absence of structures where an auxil-
iary selects a PP complement:

(83) *S 勿/其/不于/自 NP
      *S *wù   / qí / bù* [_{PP} *yú/ zì   NP*]
          must.not / FUT/ NEG   to/ from

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above (cf. [49], section 3.3). However, this requires a detailed investigation, given the existence
of the verb *zhì* 'arrive' in the Shang inscriptions.

The only analysis of *yú* 'in, to', *zì* 'from' and *zài* 'in' compatible with the entire array of data provided above, both with respect to their syntactic and semantic properties, is one in terms of prepositions. Accordingly, it is not correct to claim that all prepositions result from V-to-P reanalysis.[24] On the contrary, *yú* and *zì* in the Shang inscriptions are prepositions from their very first attestations on.

Let us now have a brief look at prepositions that do result from the reanalysis of a verb. *Cóng* 'from' is such a case. The verb *cóng* 'follow, pursue' is already attested in the Shang inscriptions (13th c. BC – 11th c. BC). As pointed out by Ohta (1958), it is difficult to pinpoint down when exactly the reanalysis of the verb *cóng* as preposition *cóng* 'from' took place. It certainly dates back to the period of Classical Chinese (5th c. BC – 3rd c. BC), where we find both the verb *cóng* 'follow' (cf. [84]) and the preposition *cóng* 'from' (cf. [85]):

(84)　夏诸侯之大夫从晋侯伐秦
　　　　Xià ,　[TP *zhūhóu*　　*zhī dàifū*
　　　　summer　feudal.lord　SUB high.offical
　　　　[vP [adj.clause pro [vP *cóng*　*Jìn hóu]][vP fá*　　*Qín]]]*
　　　　　　　　　　　follow Jin duke　attack Qin
　　　　'In summer, the high officials of the feudal lords,
　　　　following the duke of Jin, attacked Qin.'
　　　　(左传 襄公十四年 *Zuozhuan*: Xianggong 14; 5th c. – 3rd c. BC)

(85)　　從台上彈人
　　　　[TP *pro* [vP [PP *Cóng tái*　　*shàng][vP tán*　　*rén*]]
　　　　　　　　　　　from　platform top　　shoot　people
　　　　'He shot people from up on the platform.'
　　　　(左传；宣公二年 *Zuozhuan*: Xuangong 2; 5th c. – 3rd c. BC).

In (84) the external argument, i.e. the subject of the verb *cóng* 'follow' in the adjunct clause is a null pronoun controlled by the matrix subject *zhuhou zhi daifu* 'the high officials of the feudal lords'. By contrast, the PP headed by *cóng* in (85) gives no evidence of being associated with a (covert) subject position; in an example like (85) with a covert matrix subject there is no obvious controller for such a position. Also note that as a consequence of the reanalysis, the mean-

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ing has changed, from 'follow' to 'from' (cf. [85]), which – as in English – can also refer to an abstract source, as illustrated for modern Mandarin in (86):[25]

(86)   [*TopP* [*PP* *Cóng   jiǎobùshēng*][*TP* *wǒ   jiù   néng tīngchū shì nǐ]]*
               from   footsteps   1SG   then   can   discern be   2SG
         'From the footsteps I could hear that it is you.'
         (Lü Shuxiang 2000 [1980]: 131)

Two points are important here. First, the overall structure has remained constant, i.e. both the adjunct clause with the verb *cóng* and the PP headed by *cóng* occupy the preverbal adjunct position. What *has* changed is the "label", i.e. the categorial identity of the adjoined constituent: from a clause with a covert subject, whose only visible constituent is the VP, to a PP. In order to capture this, Whitman (2000) proposed the *Conservancy of structure constraint*, cited here in the formulation given in Whitman and Paul (2005: 82):

> Reanalysis as relabelling: lexical items change categorial or projection [±max, ±min] features under preservation of hierarchical (c-command) relations.

Applied to the concrete case of V-to-P reanalysis at hand, this means that it can only occur in a structural position where both a VP (embedded in a clause with a covert subject) and a PP are acceptable. The preverbal adjunct position is precisely such a position; moreover, as we have seen in section 3.3 above, homophonous verbs and prepositions are difficult to tell apart here, which makes the adjunct position a structural context *par excellence* for V-to-P reanalysis.[26]

Second, given that PPs are not associated with a subject position, more than just relabelling must occur in reanalysis. More precisely, the subject position must have been "pruned", i.e. eliminated. V-to-P reanalysis as in the case of

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25 To be precise, the preposition *cóng* in modern Mandarin also has the meaning 'by way of'; the latter might show a closer link to the meaning of the source item, i.e. the verb *cóng* 'pursue, follow'. Note that this verb no longer exists in modern Mandarin.
(i)   *cóng   xiǎo   lù   zǒu*   (Lü Shuxiang 2000 [1980]: 131)
          by   small road   walk
          'walk by way of small streets'
26 Another position besides the adjunct position (noted as V1 in the extended VP structure [i] below) where V-to-P reanalysis can occur is the complement position (V3 in [i]). These two positions thus sharply contrast with that of the main verb (V2), which cannot be reanalysed as P, given that a preposition cannot be selected by *v* (cf. Whitman and Paul 2005: 92):
(i) [*vP* [adj.clause ...VP₁...] [*vP* *v* [VP2 NP   [*v'* V₂ [complement ...VP₃ ...]]]]]

cóng can thus be represented schematically as follows (cf. Whitman and Paul 2005: 91, [28]):

(87) *cóng*

      NP   *cóng*   *cóng*

           cóng   NP   =>   *cóng*   NP
           [..v..]   [..p..]
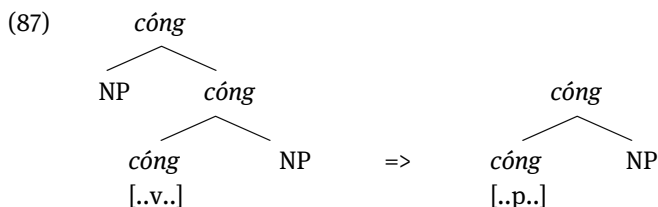
Crucially, when the verbal head *cóng* is relabelled with the categorial feature [p], the external argument position (i.e. the specifier position) is eliminated as well. Consequently, the resulting PP projection can no longer function as predicate, i.e. it can no longer be selected by *v*. This ties in with the observation above (cf. section 3.2) that unlike VPs, PPs cannot be negated or be modified by adverbs nor be selected as complements by auxiliaries

The situation in Chinese straightforwardly challenges Roberts and Roussou's (2003: 128–129) claim that deverbal prepositions "still" behave as a predicate.[27]. This claim is based on their assumption that V-to-P reanalysis as a case of *lexical* reanalysis (where both the input and output are lexical categories) is only a "preliminary change" (p. 129) on the way to the ultimate change, i.e. the reanalysis as a *functional* category. If indeed deverbal prepositions had the predicative function, i.e the most central function of a verb, then it would remain mysterious where and why verbs and prepositions differ and what consequences – if any – lexical reanalysis has. In this respect, Roberts and Roussou's conception (2003: 128–129) is similar to the notion of *xūhuà* 'emptying, bleaching' in Chinese historical grammar. *Xūhuà* refers to change in a given lexical item (typically the "bleaching" of its original meaning) without implying an endpoint in the form of a precise output and therefore allows for "incomplete" change and categorially dual, hybrid categories. This notion of change is, however, not viable; *inter alia* it completely abstracts away from the question of how "still ongoing" change without any output can be part of the synchronic grammar of a speaker. (For an in-depth discussion of the conceptual problems asso-

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27 "In other words, the preposition derived out of a verb is still interpreted as a predicate with relation properties in the sense of Hale and Keyser (1993) [...]" (Roberts and Roussou 2003: 128). Note that Roberts and Roussou (2003) content themselves with this claim and do not attempt to test it by comparing the syntactic properties of the deverbal prepositions *le* 'at' from Ewe and *wàngu* 'with' from Kambera that they cite with those of the corresponding verbs, as I have done for the Chinese verb – preposition pairs in the preceding sections.

ciated with positing "intermediate stages" of change, cf. Hale 2007, chapter 3.) Furthermore, the Chinese data discussed at length in the preceding sections demonstrate that V-to-P reanalysis results in a clearly definable output, i.e. prepositions, due to the loss of the predicative function and the concomitant loss of the external argument position.

3.7 Conclusion

The present chapter has provided extensive evidence in favour of the category preposition as distinct from the category verb, a distinction observable since the earliest attested texts, i.e. the Shang inscriptions (13th c. BC – 11th c. BC). Using a more systematic and updated demonstration, this result confirms the point of view of preceding scholars, among them Chao Yuen Ren (1968) and McCawley (1992). As shown in great detail, a whole set of tests must be applied conjointly in order to lead to a reliable identification as V or P of the item at hand.

The existence of the category preposition in Chinese is important in several respects, going well beyond an adequate description of Chinese grammar itself.

First, it invalidates our preconceived idea that isolating languages such as Chinese display a more reduced inventory of categories than inflecting languages such as Indo-European languages, and thus joins Baker's (2003) point of view that isolating and non-isolating languages do not differ in this respect. In fact, as will be argued for in the next chapter, Chinese not only has prepositions, but also postpositions and in this regard is on a par with, for example, German, which likewise shows both types of adpositional categories

Second, the Chinese data challenge current assumptions in diachronic syntax. Contrary to Roberts and Roussou's (2003) claim, V-to-P reanalysis as lexical reanalysis does *not* differ from the reanalysis of a lexical as a functional item. Prepositions precisely do not retain essential characteristics of the verb source item such as the predicative function; on the contrary, having lost the predicative function as result of the V–to–P reanalysis, prepositions are characterized by the concomitant loss of the external argument position. Consequently, Robert's and Roussou's (2009: 129) assumption about V–to–P reanalysis as only a "preliminary" step to grammaticalization "proper", defined by them as reanalysis resulting in a *functional* item, must be rejected. It is also undermined by the longevity of deverbal prepositions in Chinese (e.g. more than two thousand years in the case of the preposition *cóng* 'from').

Third, the numerous cases of co-existence of verb and preposition (reanalysed from that verb) in modern Mandarin as well as earlier stages of Chinese show that in V-to-P reanalysis, the verb has not "become" or "turned into" a

preposition. On the contrary, the verb continues to exist as such and a new preposition with properties distinct from that of the source verb item is *added* to the language. Furthermore, the source item, i.e. the verb, is not affected by the emergence of a new preposition, though it is evidently not excluded that the verb itself undergoes changes and may disappear altogether. In other words, the eventual (later) disappearance of the source item verb turns out to be epiphenominal with respect to its reanalysis as a preposition and can therefore *not* play the role of external "cause" for the emergence of a new deverbal preposition, as claimed by Longobardi's (2001) *Inertial Theory*. (Cf. Walkden 2012 for a critical assessment of Longobardi's *Inertial Theory*.)

Finally, the general assumption that all prepositions in Chinese have a verbal origin cannot be correct. In order for V–to–P reanalysis to apply, the category P and instantiations of it must exist beforehand, i.e. reanalysis cannot *create* new grammatical categories that did not exist before. Van Fintel (1995) addresses the frequent confusion between the emergence of grammatical categories *per se* in the evolution of language and the implementation of these categories by new items as a result of reanalysis from a semanticist point of view. Although he concentrates on reanalyses from lexical to functional categories, his reasoning can be extended to lexical reanalysis. Von Fintel (1995: 185) emphasizes the point that "functional categories and functional meanings are always present" and that "in grammaticalization, the functional system of a language gets richer, although overall no new meanings are created".

4 Postpositions: Double trouble*

Postpositions are another controversial category, in fact even more so than prepositions, and this for two reasons. First, they need to be distinguished from similar looking location nouns. Second, and more importantly, to acknowledge postpositions in addition to prepositions results in a mixed category of adpositions. This makes Chinese look even more "mixed" from a typological point of view than it already is, combining SVO order with a systematically head-final NP. Accordingly, until today most syntacticians do not want to commit themselves and use the traditional Chinese term "localizer" (*fāngwèicí*), if they venture into these realms at all; Cheng and Sybesma (2015), for example, do not touch this issue at all in their survey article on Chinese syntax. And those who do provide clear evidence for postpostions as an adpositional category distinct from nouns such as Ernst (1988) are quite unhappy with their own conclusion, because it goes against the idea of a consistent order between a head and its complement across categories within a language, underlying the concept of cross-categorial harmony. In other words, Chinese as a VO language should only have prepositions, but no postpositions, because the former, but not the latter select their complement to the right like the verb does. Postpositions are the harmonic type of adposition for OV languages; again, the fact that an OV like German has both postpositions and prepositions is unexpected from the point of view of cross-categorial harmony.

The controversy around postpositions also illustrates once again the bias introduced by concentrating on spatial location, to the detriment of temporal and abstract location, already observed in the discussion of prepositions in the preceding chapter. As soon as the entire range of location is taken into account, e.g. *zhuōzi shàng* 'table on' = 'on the table', *huìyì shàng* 'during the conference', *lǐlùn shàng* 'in theory', the analysis of postpositions as "localizers" is no longer viable and their syntactic and semantic differences with respect to location nouns such as *shàngbian* 'upper side' becomes evident. The latter cannot indicate temporal and abstract location; accordingly, only *zhuōzi shàngbian* 'the upper side of the table' is fine (*modulo* the meaning difference with respect to *zhuozi shàng* 'on the table'), but **huìyì shàngbian* 'the upper side of the conference' and **lǐlùn shàngbian* 'the upper side of the theory' are ungrammatical.

The present chapter gives extensive evidence for postpositions as an adpositional category in Chinese, along with prepositions. Using as starting point the few studies explicitly postulating postpositions in Chinese (cf. Chao Yuen Ren 1968: 620–627; Hagège 1975, ch. 3; Peyraube 1980; Ernst 1988), a fairly comprehensive list of postpositions is provided in section 4.1. This list in itself already constitutes an argument in favour of of the category postposition, because all types of location (spatial, temporal and abstract) can be expressed, as is typical of adpositions. Section 4.2 discusses syntactic arguments against the conflation of postpositions with nouns. First, unlike nouns and like prepositions in Chinese, postpositions always require their complement to be present (*ban on adposition stranding*). Second, nothing can intervene between the postposition and its complement. This also holds for *de* subordinating modifiers to a noun as in *Lǐsì de zhuōzi* 'Lisi's table' and *zhuōzi (de) shàngbian* 'the upper side of the table'; the optionality of *de* in examples of the latter type is shown to be due to the relational noun status of location nouns. Third, the fact that postpositions have not only been reanalysed from nouns, but also from verbs considerably weakens the "historical" motivation for the nominal analysis of postpositions. The distribution of PostPs examined in section 4.3 allows us to identify differences between prepositions and postpositions. Unlike PrePs, PostPs are acceptable in subject position and can modify all types of nouns, while PreP modifiers are confined to DPs headed by relational nouns.[1] Section 4.4 turns to the hardly explored domain of *Circumpositional Phrases* (CircPs), i.e. complex adpositional phrases containing both a preposition and a postposition, such as *cóng zhuōzi shàng* 'from table on' = 'from the table'. While for this type of CircP indicating spatial location the literature – without further discussion – in general assumes the structure [$_\text{PreP}$ *cóng* [*zhuōzi shàng*]], in the case of CircPs encoding temporal location such as *cóng míngtiān qǐ* 'from tomorrow on', nothing is said about their internal structure and they are treated as a kind of discontinuous constituent noted as *cóng ... qǐ* 'from...on'. In order to determine the internal structure of these temporal CircPs it is helpful to go beyond the Chinese case and examine similar cases of CircPs in German, a language which like Chinese has both prepositions and postpositions. It turns out that the hierarchy 'Path over Place' observed for German and other languages also holds for CircPs in Chinese; the way this hierarchy is implemented, however, is different in spatial vs temporal CircPs. Section 4.5 concludes the chapter.

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1 Throughout this chapter, PreP rather than the current abbreviation PP is used for prepositional phrases, in order to facilitate the contrast with PostP.

4.1 Inventory of postpositions

Since postpositions are rather controversial, it seems necessary to first provide a fairly exhaustive list in order to give the reader an idea what items fall under this category. In addition, simple examples comprehensible without glosses are provided for each postposition in order to highlight a property holding for adpositions in general, i.e. the ability of indicating spatial, temporal or abstract location. This on its own already presents quite a challenge for the localizer scenario; note for example that when indicating temporal location postpositions can select a clausal complement (cf. *hòu* 'after', *yǐlái* 'since' in [1] below), a fact difficult to reconcile with their alleged "localizer" status, but straightforwardly accounted for when the head in question is an adposition. (For clause selecting prepositions, cf. the list [1] in chapter 3.)

(1) List of postpositions (= 20)

hòu 'behind; after'
gāolóu hòu 'behind the building'; *sān nián hòu* 'after three years';
tā zǒu hòu 'after he left'

lái 'for, during, over'
sān tiān lái 'during three days'; *sānqián nián lái* 'over [the past]
3000 years'

lǐ[2] 'in, during'
fángjiān lǐ 'in the room'; *jiàqī lǐ* 'during the vacation'; *diànshì lǐ* 'on TV'

páng 'next to, by; at the side of'
chítáng páng 'by the pond'; *cónglín páng* 'near the forest'

qǐ 'starting from, on'
(cóng) míngtiān qǐ 'from tomorrow on'

qián 'in front of; before'
chuāng qián 'in front of the window'; *xià yǔ qián* 'before it rains'

---

2 The postposition *zhōng* 'in', the equivalent of *lǐ* 'in, during' in a more formal register, is not included here.

qiánhòu 'in front and behind; around'
    fángzi <u>qiánhòu</u> 'in front of and behind the house'; *chūnjié <u>qiánhòu</u>*
    'around the Spring Festival'

shàng 'on, in, at'
    bàozhǐ <u>shàng</u> 'in the newspaper' (spatial and abstract); *lǐlùn <u>shàng</u>*
    'in theory'

shàngxià 'around, about, or so'
    sānshí suì <u>shàngxià</u> 'about 30 years', *líng dù <u>shàngxià</u>* 'around
    zero degree'

wài 'outside, beyond'
    chuāngzi <u>wài</u> 'outside the window'; *sān gōnglǐ <u>wài</u>* 'more than
    3 km away'

xià 'under'
    yuèguāng <u>xià</u> 'under the moonlight'; *zhè zhǒng tiáojiàn <u>xià</u>*
    'under these conditions'

yǐhòu 'later, after' (temporal)'
    sān tiān <u>yǐhou</u> 'three days later'; *xià yǔ <u>yǐhòu</u>* 'after it had rained'

yǐlái 'since'
    tā dào zhōngguó <u>yǐlái</u> 'since he came to China'

yǐnèi[3] 'within; less than'
    sān tiān <u>yǐnèi</u> 'within three days'; *wǔshí rén <u>yǐnèi</u>* 'less than 50 persons'

yǐqián 'ago, before'
    sān nián <u>yǐqián</u> 'three years ago'; *tā dào zhōngguó <u>yǐqián</u>* 'before he
    came to China'

yǐshàng 'above, over'
    xuěxiàn <u>yǐshàng</u> 'above the snowline'; *shí fēn <u>yǐshàng</u>* 'over 10 points'

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3 The postposition *nèi* 'in, within' is used in the written language and certain fixed expressions only (cf. Lü Shuxiang 2000 [1980]: 413).

yǐwài   'beyond, besides'
         chángchéng <u>*yǐwài*</u> 'beyond the Great Wall'; *sān tiān* <u>*yǐwài*</u> 'beyond
         three days'; *zhèngwén* <u>*yǐwài*</u> 'besides the main text'

yǐxià   'under, below'
         dìmiàn <u>*yǐxià*</u> 'under the ground'; *yī gōngchǐ* <u>*yǐxià*</u> 'under one meter'

zhījiān   'between'
         wǒmen <u>*zhījiān*</u> 'between us'; *yī diǎn hé sān diǎn* <u>*zhījiān*</u> 'between one
         and three o'clock'

zuǒyòu   'left and right of; around, about'
         tiělùxiàn <u>*zuǒyòu*</u> 'left and right of the railway line'; *sānshí suì* <u>*zuǒyòu*</u>
         'around thirty years'

Before turning to the detailed discussion of postpositions, note the existence of the adverbs *qiánhòu* 'from beginning to end; altogether', *shàngxià* 'from top to bottom', *yǐhòu* 'afterwards, later', *yǐqián* 'before, previously', *yǐshàng* 'above', *yǐxià* 'below, from now on', and *zuǒyòu* 'anyway', some of which are illustrated below:

(2)   a.   *Tā* <u>*qiánhòu*</u> *zhǐ lái -guo yī cì*
           3SG altogether only come-EXP 1 time
           'Altogether he only came once.'

       b.   *Ta qùnian lái -guo,* <u>*yǐhòu*</u>   *zài   méi jiàn-guo tā*
           3SG last.year come-EXP afterwards again NEG see-EXP 3SG
           'He visited last year, afterwards I have not seen him anymore.'

       c.   <u>*Yǐqián*</u> *wǒmen bìng bù rènshi*
           before 1PL   at.all   NEG know
           'Before, we didn't know each other at all.'

       d.   *Wǒ* <u>*zuǒyòu*</u> *xiánzhe méi shì* ,
           1SG anyway idle   NEG affair
           jiù   péi   nǐ zǒu yī tàng ba
           then accompany 2SG walk 1 time
           'I have nothing to do now anyway, so let me go with you.'

These adverbs should not be mistaken as cases of the homophonous postpositions lacking a complement. For as to be illustrated in section 4.2.2 below, postpositions – like prepositions – always require their complement and therefore do not allow for "stranding".

Given that the list of items under (1) looks straightforward enough, the non-sinologist might be somewhat surprised by the still controversial status of postpositions, which in general are treated as nouns (cf. Y.-H. Audrey Li 1990, McCawley 1992) or as a hybrid category "deviate of N" (cf. Huang, Li and Li 2009: 17). By contrast, linguists knowing Chinese and/or having been exposed to the Chinese grammatical tradition will come up very readily with the following points, which at first sight blur the rather clear picture presented in (1): many postpositions have a "nominal origin", i.e. have been reanalysed from nouns, and allegedly "still" retain traces of this nominal origin; (2) many postpositions have a "disyllabic counterpart" which shows nominal properties, such as *shàngbian* 'upper side' for *shàng* 'on', *xiàbian* 'underside' for *xià* 'under' etc.

In fact, Ernst (1988) already addressed the latter issue for the three postpositions *shàng* 'on', *xià* 'below' and *lǐ* 'in' and provided two conclusive tests that distinguish them from the "corresponding" location nouns *shàngbian* 'upper side', *xiàbian* 'underside', and *lǐbian* 'inside'. First, like prepositions, postpositions always require an overt complement (cf. [3a]). Second, nothing can intervene between the postposition and its complement, and accordingly, the item *de* subordinating modifier phrases to a noun is excluded here as well (cf. [4a]). Location nouns such as *shàngbian* 'upper side', by contrast, can occur on their own (cf. [3b]) and also allow for the presence of the subordinator *de* (cf. [4b]); in this respect they pattern with nouns in general, where modifiers are subordinated by *de*, as in *Lǐsì de shū* 'Lisi SUB book' = 'Lisi's book(s)'.

(3)   a.   *Shū zài [PostP *(zhuōzi) shàng]*
              book be.at   table   on
              'The books are on the table.'

       b.   *Shū zài [NP (zhuōzi) shàngbian]*
              book be.at   table   upper.side
              'The books are on the top (of the table).'

(4)   a.   *[PostP zhuōzi (*de) shàng]*
                   table   SUB on
              'on the table'

b. [_{NP} *zhuōzi (de) shàngbian*]
    table   SUB   upper.side
  'the top of the table'

In other words, the items commonly presented in the literature as monosyllabic or disyllabic "variants" of the same "localizer" class turn out to instantiate two different categories, postpositions *shàng* 'on', *xià* 'below', *lǐ* 'in' etc. on the one hand, and location nouns *shàngbian* 'upper side, top', *xiàbian* 'underside, bottom', *lǐbian* 'inside' etc. on the other.[4] The fact that the location nouns are compounds, where the "same" postposition element features as modifier of the nominal head *-bian* 'side', *viz* [_{N°} *xià-bian*] 'below-side' = 'underside' has been mistaken as clue for the categorial identity between location nouns and postpositions.[5]

Since Ernst only examines three postpositions and does not take into account the cases of temporal and abstract location expressed by these postposition (e.g. *lǐlùn shang* 'in theory', *jiàqī lǐ* 'during the holidays', *zhè zǒng tiáojiàn xià* 'under these conditions'), in the following I demonstrate that Ernst's (1988) tests can be applied to all types of postpositions, irrespective of the type of location (spatial, temporal or abstract). The results of these tests – in combination with other observations – all support distinguishing postpositions from location nouns (*contra* among others Y.-H. Audrey Li 1990, McCawley 1992, Huang, Li and Li 2009: 13–21). As the list in (1) shows, postpositions can be monosyllabic or disyllabic; therefore, to proceed as Peyraube (1980: 78) does and to analyse only monosyllabic items such as *shàng* 'on', *xià* 'under', *lǐ* 'in' as postpositions leads to only a partially correct picture.

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4 Although in the Chinese grammatical tradition, postpositions and location nouns alike are called "localizers" (*fāngwèicí*), this does not prevent good grammar manuals from observing differences between the two, even though these are presented as properties of individual items. For example, Lü Shuxiang (2000 [1980]: 424) stresses the fact that unlike *pángbiān* 'side', *páng* 'at the side of, next to' cannot be used on its own and does not allow for the subordinator *de* to intervene (cf. chapter 3.4.1 for the ban on stranding for prepositions):

(i)   *chítáng (de) pángbiān*   vs   (ii) *chítáng (*de) páng*
    pond   SUB   side   pond   SUB   near
    the side(s) of the pond'   'next to/by the pond'

In other words, while *pángbiān* 'side' is a noun, *páng* is a postposition and the preceding phrase is its complement, whence the unacceptability of *de*.

5 Other nouns entering into the composition of location nouns are *miàn* 'surface' and *tóu* 'head', resulting in *xià-mian*, *xià-tou* 'underside', *shàng-mian*, *shàng-tou* 'upper side' etc. Note that location nouns headed by *-tou* exclusively belong to the spoken language. In the remainder of this chapter, the form 'X-*bian*' is chosen for representing location nouns.

4.2 Postpositions vs nouns

4.2.1 The (un)acceptability of the subordinator *de*[6]

Let us first address the (un)acceptability of the subordinator *de* illustrated in (4a) and (4b): while postpositions behave like prepositions in that nothing – neither *de* nor any other element – can intervene between the adpositional head and its complement, location nouns as a subclass of nouns are evidently compatible with *de*.[7] The optionality of *de* observed in (4b) and not further commented on by Ernst (1988) is due to their status of being relational nouns, on a par with kinship terms and nouns denoting certain institutions (e.g. *xuéxiào* 'school', *gōngsi* 'company', *guó* 'country') etc.[8]

(5)   *tā   (de) māma / mèimèi*
        3SG SUB   mother/younger.sister
        'his mother/younger sister'

(6)   *wǒmen (de) jiā   / xuéxiào/ gōngsi*
        1PL   SUB home/ school/ company
        'our home/school/company'

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6 For a number of recent (but very divergent) proposals for *de*, cf. among others Cheng and Sybesma (2009), Y.-H. Audrey Li (2007, 2012, to appear), Simpson 2001, C.-C. Jane Tang (2007), Niina Ning Zhang (2010), Paul (2012, to appear) and references therein.

7 As Huang, Li and Li (2009: 16) state themselves, the unacceptability of *de* intervening between a postposition and its complement presents a problem for their assumption that so-called "localizers" (L) are a subclass of nouns, nouns precisely allowing for *de*: "The question, then, is how to account for the lack of *de* if L is viewed as a type of N. It should be obvious that some stipulation is unavoidable in order to allow L to be N but still different from N. To this effect, we hypothesize that a language may allow a (natural) subclass of words in a given category X to 'deviate' behaviorally from X." Huang, Li and Li (2009: 17) therefore characterize postpositions as "deviates" of N, where "[i]n deciding the properties of a categorial deviate, anything language-specific in the original category is disfavored." [...]. "Interestingly, the use of *de* is also highly language-specific. [...] As a result, L[ocalizer] keeps all the syntactic properties of N except *de*."

8 As well-established in the literature, languages differ in which nouns are considered as relational nouns, notwithstanding a kind of "hard core" membership including e.g. kinship terms. For further discussion of relational nouns in Chinese, cf. among others Niina Ning Zhang (2009) and references therein.

All these nouns have in common that they imply a "possessor", i.e. one is always the mother or sister with respect to somebody else. Accordingly, when the possessor is not spelt out, it is implicitly present; this explains why a location noun such as *shangbian* 'upper side, top' is always interpreted as the upper side of a given object, known to speaker and hearer or mentioned in the preceding discourse. As illustrated by the English translation of (3b), repeated here in (7), this likewise holds for location nouns in English:[9]

(7)   *Shū zài* [NP *(zhuōzi) shàngbian]*
        book be.at   table   upper.side
        'The books are on the top (of the table).'

Relational nouns contrast with "ordinary" nouns for which *de* is obligatory in the presence of modifiers:

(8)   a.   *Wǒmen *(de) shū / qìchē/ qián*
             1PL   SUB book/ car   / money
             'our book(s)/car/money'

        b.   *ta   *(de) shǒujī   / gùshi/ māo*
             1SG   SUB   mobile.phone/story/ cat
             'his mobile phone/story/cat'

It is thus the special status of location nouns *qua* relational nouns and the ensuing optionality of *de* that leads to the surface similarity of two different structures: an NP where the modifier phrase and the noun are simply juxtaposed, on the one hand: [NP XP NLoc], and a PostP where the complement precedes the postpositional head: [PostP XP Postp], on the other.[10]

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9 Note, though, that the conditions for the optionality of *de* depend on the type of relational noun, i.e. on the type of possessor inherently associated with the noun in question. For kinship terms, *de* is optional only with personal pronouns (for some speakers exclusively with singular pronouns), whereas for location nouns the possessor can also be an NP.

10 Following current practice in the literature, the term NP is used here not only for simple noun phrases such as *shu* 'book', but as a cover term for nominal projections in general, i.e. proper names (*Lǐsì*), modified NPs (*Lǐsì de shū* 'Lisi's book', *hěn guì de shū* 'very expensive books'), and quantified NPs (*hěn duō shū* 'many books', *sān běn shū* '3 CL book' = three books) etc. When a precise structural analysis is called for, however, a distinction is made between NPs and DPs (*Determiner Phrase*). The term DP was introduced by Abney (1987) in order to capture the fact that in nominal projections with an article or a demonstrative pronoun such as *that book*, *the students* it is in fact *that* or *the* instantiating the functional category *Determiner*

Once again, as soon as we go beyond the case of spatial location, the situation is more straightforward, because the differences between postpositions on the one hand, and location nouns, on the other, are very clear. For in addition to NP complements, postpositions denoting temporal or abstract location may select clausal complements (TP). This fact again distinguishes postpositions from nouns, because the complement clause of a noun head such as *xiāoxi* 'news' in (9) must be subordinated to the latter by *de*, whereas for postpositions the presence of *de* is precisely excluded:

(9) *[DP[TP Liú Xiáobō dé   Nuòbèi'ěr jiǎng] *(de) xiāoxi]*
          Liu Xiaobo obtain Nobel   prize   SUB news
     'the news that Liu Xiaobo obtained the Nobel prize'

(10) *[PostP [TP Tā kǎoshàng dàxué] (*de) yǐhòu]*
          3SG enter   university SUB   after
     dàjiā   dōu hěn gāoxing
     everybody all   very happy
     'After he succeeded entering the university, everybody was happy.'

In this respect, postpositions behave like prepositions which in addition to NPs can also select clauses as complements:

(11) *[PreP Zìcóng [TP tā líkāi   Běijīng]], wǒmen yīzhí   méi jiàn miàn*
          since   3SG leave Beijing 1PL   always NEG see   face
     'Since he left Beijing, we haven't met anymore.'
     (Lü Shuxiang 2000 [1980]: 695)

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that heads the projection and selects the noun phrase as complement. Since then, numerous additional functional categories have been posited below the *Determiner* projection (cf. among others Scott 1998, 2002a,b and the papers in Cinque 2002). In Chinese, demonstrative pronouns (*zhe* 'this', *nà* 'that') and the so-called subordinator *de* are realizations of D (where *de* also realizes other functional heads in the nominal projection such as "little" *n*; cf. Paul 2012, to appear). Accordingly, phrases containing these items are to be analysed as DPs. For further discussion of the architecture within the nominal projection of Chinese, cf. Y.-H. Audrey Li (1998, 1999) and Huang, Li and Li (2009, chapter 8).

4.2.2 Ban on postposition stranding

As already pointed out in the preceding chapter 3 on prepositions (cf. section 3.4), many languages do not allow for the complement of a preposition to be empty. In fact, the same holds for postpositions, in Chinese and in other languages, e.g. English (cf. **(two days) ago/later*): [11]

(12) a. *Wǒ [PostP [NP xīn-nián][Postp° yǐqián]] yào   huí   jiā   yī tàng,*
1SG   new-year   before   want return home 1 time
tā   yě   yào [PostP [NP *(xīn -nián)][Postp° yǐqián]]   zǒu
1SG also want   new-year   before   leave
'I want to go home before the New Year; he also wants to leave before the New Year.'

b. *Miǎnfèi bǎoguǎn sān tián, [PostP [NP *(sān tiān)] [Postp° yǐwài]*
free   storage 3 day   3   day   beyond
zhuóshōu bǎoguǎn-fèi
collect   storage -fee
'The free storage is three days, beyond three days there is a storage fee.'

The complements of the postposition in the second conjunct *xīn-nián* 'New year' (12a) and *sān-tiān* 'three days' (12b) are easily recoverable from the preceding context, but stranding of the postpositions *yǐqián* 'before' (a temporal locative) and *yǐwài* 'beyond, besides' (an abstract locative) is nevertheless blocked. This confirms the general validity of the ban on postposition stranding, first observed by Ernst for the spatial locative with *shàng* 'on' (cf. [3a] above), irrespective of the type of locative (spatial, temporal or abstract) and the monosyllabic or disyllabic nature of the postposition involved.

The latter fact also challenges an analysis of localizers as clitics (cf. Liu Feng-hsi 1998, Zhang Niina Ning 2002a), where the observed syntactic constraint ruling out stranding is presented as a consequence of the phonological requirement that clitics always need a host to attach to. The phonological form of disyllabic postpositions in itself certainly does not warrant their analysis as clitics, as witnessed by the phonological autonomy of the corresponding homophonous adverbs such as *yǐqián* 'previously, in former times', *yǐhòu* 'later,

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11 Note that Huang, Li and Li (2009) do not mention the ban on adposition stranding at all.

afterwards' which are perfectly fine in the sentence-initial position, i.e. in a position without any element to "lean on":

(13)   *Yǐqián wǒmen bìng   bù   rènshi*   (= [2c] above)
         before 1PL   at.all NEG know
         'Before, we didn't know each other at all.'

Disyllabic postpositions also confirm the lack of any parallel between postpositions in Chinese and particles in so-called *phrasal verbs* such as *take over* in English. Since postverbal particles in English and other Germanic languages in general have transitive preposition "counterparts" (cf. the preposition *over* in *fly [PP over New York]*), such a parallel might at first sight seem possible. (For an in depth study of verb particle constructions, cf. Haiden 2006 and references therein.) However, as illustrated by the examples already provided, postpositions do not enter into the formation of "complex verbs" of the type *take over*, but project phrases, which like other XPs can play the role of argument or adjunct (cf. section 4.3 below).

Postpositions cannot be stranded by movement of their complement, e.g. relativization ([14b] and [15b]) or topicalization ([14c] and [15c]), either:

(14)   a.   *[TP [PostpP [Nà   liàng qìchē] shàng] pā-zhe yī zhī māo]*
                     that CL   car   on   lie-DUR 1 CL cat
            'There is a cat lying on the car.'

       b. **[DP [TP [PostpP [e] shàng] pā-zhe yī zhī māo] de [nà   liàng qìchē]]*
                     on   lie-DUR 1 CL cat SUB that CL   car
            ('the car that a cat is lying on')

       c. **[TopP [Nà   liàng qìchē], [TP [PostpP [e] shàng] pā-zhe yī zhī māo]]*
                  that CL   car   on   lie-DUR 1 CL cat
            ('That car, a cat is lying on.')

(15)   a.   *[TP Wǒ xiǎng [PostP [nèi   ge dìqū] yǐwài]*
                  1SG think   that CL district beyond
            mei yǒu   xuéshēng   zhù]
            NEG exist student   live
            'I don't think there are any students living beyond that district.'

       b. **[DP [TP [PostpP [e] yǐwài] mei yǒu xuéshēng zhù] de [nèi   ge dìqū]]*
                     beyond NEG exist student live SUB   that CL district

('that district where there are no students living beyond')

c. *[TopP [Nèi   ge dìqū]   [TP wǒ xiǎng [PostP [e] yǐwài]
that CL district 1SG think   beyond
mei yǒu   xuéshēng zhù]]
NEG exist student   live
('That district, I don't think there are any students living beyond.')

Again, both monosyllabic and disyllabic postpositions disallow stranding and thus pattern with prepositions (cf. chapter 3 above).

By contrast, location nouns *qua* relational nouns allow for the possessor to remain implicit, whose identity is then established from the linguistic or extra-linguistic context:

(16)   a.   *[TP [NP [Nà   liàng qìchē] shàngbian] pā-zhe yī zhī māo]*
that CL   car   upper.side lie-DUR 1 CL   cat
'There is a cat lying on the top of that car.'

b.   *[DP [TP [NP [e] shàngbian] pā-zhe yī zhī māo] de [nà liàng qìchē]]*
upper.side lie-DUR 1 CL cat SUB that CL   car
'that car on the top of which a cat is lying'

c.   *[TopP [Nà   liàng qìchē], [TP [NP [e] shàngbian] pā-zhe yī zhī māo]]*
that CL   car   upper.side lie-DUR 1 CL   cat
'That car, a cat is lying on its top.'

In the relativization and topicalization structure in (16b) and (16c), it is *nà liàng qìchē* 'that car' that provides the reference for the implicit possessor present in the NP headed by *shàngbian* 'upper side', and the resulting structure is acceptable. This is similar to the situation in (17a) with kinship terms: here the explicitly mentioned possessor *wǒ* 'I' in the NP headed by *bàba* 'father' provides the identity for the implicit possessor of *māma* 'mother' in the second conjunct.

(17)   *Wǒ bàba huílái-le , [NP [e] māma] yě   huílái-le*
1SG father return-PERF   mother also return-PERF
'My father returned, and my mother returned, too.'

The ban on adposition stranding confirms the distinction established between location nouns and postpositions; while location nouns allow for an implicit

possessor, postpositions always require an overt complement, even if it is easily retrievable from within the same sentence.

4.2.3 Deverbal postpositions

Besides the alleged non-distinctness between postpositions and "corresponding" location nouns in the synchronic grammar of Chinese, another argument often adduced in favour of a nominal analysis of postpositions is their nominal origin. While it is correct that many postpositions are reanalysed from nouns, Djamouri and Paul (2012) demonstrate that numerous postpositions have been reanalysed from (motion) verbs, a phenomenon completely overlooked in the literature. The existence of two sources for postpositions in Chinese has been partly obscured by the fact that homophonous verbs and nouns have served as input for the reanalysis: *hòu* 'to follow' and *hòu* 'posteri(ori)ty, rear'; *qián* 'to precede' and *qián* 'front'; *shàng* 'to go up' and *shàng* 'upper side, top'; *xià* 'to go down' and *xià* 'bottom' etc. By contrast, the reanalysis from a verbal input is obvious for the postpositions *lái* 'during, over' and *qǐ* 'starting from', given that *lái* and *qǐ* have only been attested as verbs through the entire history of the Chinese language. The failure to realize this state of affairs is once again due to the tendency in the literature to concentrate on spatial location and to ignore temporal and abstract location.

Importantly, 'N-to-postposition' reanalysis and 'V-to-postposition' reanalysis proceeded independently and at different stages in the history of Chinese, 'V-to-postposition' reanalysis being attested earlier (4th c. BC) than 'N-to-postposition' reanalysis (1st c. BC). Since input items belonging to different categories are involved, the reanalysis of deverbal postpositions must be distinguished from that of denominal postpositions such as *hòu* 'behind, after'; *qián* 'in front of, before'; *shàng* 'on', *xià* 'under' etc.

While it would lead too far to present 'V-to-postposition' reanalysis in detail here, it is worthwhile to point out that in addition to *lái* 'during, over' and *qǐ* 'starting from, on', all the postpositions "prefixed" by *yǐ* can be shown to result from the reanalysis of verbs: *yǐhòu* 'after' (temporal), *yǐlái* 'since', *yǐqián* 'before, ago', *yǐshàng* 'above, over', *yǐxià* 'under, below' etc. Note that postpositions of the form [*yǐ*-X] are never taken into account in discussions of the categorial status of postpositions. This is probably due to the fact that it is difficult to provide "corresponding" location nouns, given the presence of *yǐ*, which until Djamouri (2009) had defied analysis. In addition, the disyllabic character of [*yǐ*-X] postpositions seems to run counter the widely accepted idea in both functional and formal approaches that reanalysis is accompanied by a loss of

"phonetic substance" (cf. Roberts and Roussou 2003, among many others) and therefore might constitute another reason for wanting to dismiss these items. Note that despite a majority of deverbal postpositions among postpositions exclusively indicating temporal or abstract location, there is no fixed correlation between verbal "origin" and temporal/abstract location, as witnessed by the postpositions *yǐshàng* 'above, over', *yǐwài* 'beyond' and *yǐxià* 'under, below', which can all convey spatial location as well. This is in fact the expected situation; as soon as an item – be it a verb or a noun – is reanalysed as postposition, it will pattern with the other members of that class and therefore in principle be able to convey all types of location, as is typical of adpositions. Last, but not least, Chinese is evidently not the only language having postpositions reanalysed from both verbs and nouns, but co-existing denominal and deverbal postpositions are likewise attested for typologically different languages such as German and the Kwa language Mande.

4.2.4 Interim summary

As already observed in the case of prepositions in chapter 3 above, there does not exist a unique decisive test for "postpositionhood", but several criteria must be appplied conjointly in order to identify postpositions and distinguish them from location nouns. In addition to the general ban on adposition stranding, the most important property characterizing postpositions is the unacceptability of *de*, which is completely unexpected under a nominal analysis of postpositions, as acknowledged by Huang, Li and Li themselves (2009: 16). Accordingly, they resort to the stipulation that "a language may allow a (natural) subclass of words in a given category X to 'deviate' behaviorally from X" (p. 16), where this deviation precisely concerns the unacceptability of *de* in the case of the nominal subclass "localizer". Under the adpositional analysis defended here, no such stipulation is necessary; the unacceptability of *de* (and of any other item, for that matter) is derived from the simple fact that nothing may intervene between a head and its complement. Furthermore, as discussed in section 4.2.3 above, postpositions reanalysed from verbs undermine the possibility of using the nominal origin of postpositions as the main "evidence" for their synchronic analysis as nouns. (The word *evidence* is enclosed in quotation marks, because historical information is in any case inaccessible to the speaker and can therefore not be adduced as an argument for a given synchronic analysis.)

The confusion between postpositions and location nouns and their subsequent conflation into one nominal category is only possible when completely glossing over the associated differences in meaning. It suffices to examine a few

'postposition – location noun' pairs to detect these differences: *shū shàng* 'in the book' (cf. *shū shàng de gùshi* 'book on SUB story' = 'the story in the book') vs *shū shàngbian* 'the upper side of the book' (cf. **shū shàngbian de gùshi* 'book upper.side SUB story'); *bàozhǐ shàng* 'in the newspaper (spatial and abstract location)' vs *bàozhǐ shàngbian* 'the upper side of the newspaper'. Accordingly, the common practice adopted by the proponents of the nominal analysis of postpositions to treat postpositions and "corresponding" location nouns as quasi-synonyms is not correct at all. Also note that the "counterpart" in form of a location noun – *modulo* the semantic differences – only exists in the case of spatial location, but not for postpositions indicating temporal and abstract location, another point completely neglected in the literature and one which has considerably biased the analysis of postpositions.

Finally, Circumpositional Phrases of the form 'preposition NP postposition' (e.g. *cóng míngtiān qǐ* 'from tomorrow on') to be examined in section 4.4 below provide another argument in favour of the adpositional status and against the nominal status of postpositions. CircPs in Chinese can be shown to involve the same 'Path over Place' hierarchy as CircPs in other languages such as German and English, where the adpositional status of the items concerned is beyond doubt and a nominal status completely excluded: *von morgen an* 'from tomorrow on'.

4.3 The distribution of Postpositional Phrases

As illustrated in the preceding chapters, only arguments are allowed in postverbal position in Mandarin. Adjuncts occur exclusively preverbally, to the right or to the left of the subject. Previous research on postpositions focuses on PostPs expressing spatial location, but below data are provided exemplifying all three types of location: spatial, temporal and abstract. We shall see that the type of location plays a role in the distribution of adjunct PostPs. Concerning argument PostPs, their (un)acceptability in the subject position of various constructions corroborates their being distinct from nouns and also highlights differences with respect to the other adpositional category, i.e. prepositions.

4.3.1 Adjunct PostPs

In the sentence-initial topic position to the left of the subject, PostPs of all types are acceptable, encoding spatial (cf. [18]), temporal (cf. [19]) or abstract location (cf. [20]):

(18)   *[PostP Yuánzi lǐ], nǐ zhǐ néng zhòng shù*
            garden in   2SG only can plant tree
      'In the garden, you can only plant trees.'

(19)   a. *[PostP[Jǐ   ge yuè] yǐqián] tā jiù   qù Shànghǎi le*
             several CL month before 3SG then go Shanghai SFP
        'Several months ago, he went to Shanghai.'

      b. *[PostP [Jīnnián   nián-chū   ] yǐlái],*
              this.year year-beginning   since
         tā yǐjīng chū -le sān cì   chāi   le
         3SG already go.out-PERF 3   time errand SFP
         'Since the beginning of this year, he has already been three times
          on business trips.'

(20)   *[PostP Yuánzé   shàng] nǐmen kěyǐ zhèyàng zuò*
            principle on   2PL   can this.way do
      'In principle you can do it this way.'   (Ernst 1988: 229, (19))

In the preverbal position to the right of the subject, temporal or abstract location (including abstract means) can be expressed by PostPs (cf. [21a] to [21c]):

(21)   a. *Tā [PostP [jǐ   ge yuè] yǐqián] jiù   qù Shànghǎi le*
         3SG   several CL month before   then go Shanghai SFP
        'He went to Shanghai several months ago.'

      b. *Tā [PostP[jīnnián   nián-chū   ] yǐlái]*
         3SG   this.year year-beginning since
        yǐjīng chū -le sān -cì chāi   le
        already go.out -PERF 3   -time errand SFP
        'He has already been on business trips three times since
        the beginning of this year.'

  c. *Nǐmen [PostP yuánzé shàng] kěyǐ zhèyàng zuò*
    2PL   principle on can this.way do
    'You can in principle do it this way.'

However, spatial PostPs in this position are limited to a goal or directed motion interpretation:

(22) a. *Nǐ [PostP wòshì lǐ] bù néng fàng diànlú*
    2SG   bedroom in NEG can put electric.stove
    'You cannot put an electric stove into the bedroom.'

  b. *Bù yào ràng tāmen tīngjiàn, zánmen [PostP yuánzi lǐ] shuō qù*
    NEG want let 3PL hear 1PL   garden in talk go
    'We don't want them to overhear us, let's go to the garden and talk.'

In order to indicate "place where" a PreP headed by *zài* 'in, at' is required:

(23) *Tā [PreP zài [PostP zhuōzi xià]] /*[PostP zhuōzi xià]*
  3SG at   table under   table under
  kàndào-le yī zhī lǎoshǔ
  see -PERF 1 CL mouse
  'He saw a mouse under the table.'

Huang, Li and Li (2009:13-14) use the unacceptability of a spatial PostP in the position between the subject and the verb as an argument against analysing PostPs as adpositions. Instead, as mentioned in section 4.2.4 above, they set up a special category *Localizer* (L), "a deviate of N" (2009: 21). Citing the data in (24), they argue (p. 14), "If L were a postposition, there would be no reason why it should not behave like one, and its presence in (11b) [= (24b), WP] would be enough to introduce the nominal *chéng* 'city' just like *outside* does in English."

(24) a. *Tā *(zài) nàge chéngshì jǔbàn-guo yī ge zhǎnlǎnhuì*
    he P that city hold -GUO a CL exhibition
    'He held an exhibition *(in) that city.'

b. *Tā *(zài) chéng wài   / lĭ   jŭbàn-guo yī ge zhǎnlǎnhuì*[12]
   he   P city   outside/ inside hold -GUO a CL exhibition
   'He held an exhibition outside/inside the city.'
   (Huang, Li and Li 2009: 13; [11a-b]; their glosses and translation)

However, besides not being able to account for the ban on adposition stranding
and the unacceptablity of *de* in PostPs, the "Localizer" analysis is too crude to
capture the complete distribution. For adjunct PostPs denoting temporal and
abstract location are completely acceptable in the preverbal position to the right
of the subject, a fact overlooked by Huang, Li and Li (2009: 13), who do not
provide any other example apart from (24).

Furthermore, as (22) illustrates, spatial PostPs are not excluded from the
preverbal position, but instead of encoding the place where the event is located,
they indicate the endpoint of a motion. Examining more closely the exact posi-
tion of the spatial PostP in (22a), we see that this PostP in fact is not an adjunct,
but the location argument of the verb *fàng* 'put' which has raised to a position
above negation and auxiliaries. The argument status of a preverbal spatial
PostP is better visible in (25) where the PostP is the only argument of the verb
zuò 'sit (down)':

(25) *a. Nĭ [_PostP yĭzi   shàng] zuò, wǒ [_PostP dèngzi shàng] zuò*
      2SG   chair on   sit 1SG   stool on   sit
      'You sit on the chair, I sit on the stool.'

   b. *Nĭ zuò yĭzi   shàng, wǒ zuò dèngzi shàng*
      2SG sit chair on   1SG sit stool   on
      'You sit on the chair, I sit on the stool.'

The argument PostP can either remain in postverbal position as in (25b) or be
fronted to the right of the subject.

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12 In fact, *chéngwài* 'suburbs' and *chénglĭ* '(inner) city' in (24b) are compound nouns (N°), not
postpositional phrases (cf. Lü Shuxiang 2000 [1980]: 360 for additional [N-*lĭ*] compounds). This
is shown by the fact that they can be embedded in larger compounds, e.g. *chénglĭrén* 'city
dweller'. Furthermore, being a bound morpheme, *chéng-* cannot occur on its own e.g. as a
modifier subordinated to the head noun by *de*, in contrast to *chénglĭ*:
(i) *Hé   zài [_N° chénglĭ] de nánfāng/ *[chéng-] de nánfāng*
    river be.in city   SUB south / city- SUB south
    'The river is to the south of the (inner) city.'

The same holds for a place noun such as *chéngshì* 'town, city' which requires the preposition *zài* 'at' when playing the role of a TP-internal adjunct indicating the place where the event occurred, as in Huang, Li and Li's example (24a), but not when it has argument status and is fronted to a preverbal position *above* negation and auxiliaries:

(26) a. *Tā [DP nà ge chéngshì] hái méi qù-guo*
　　　3SG 　　that CL town 　　still NEG go-EXP
　　　'He hasn't been to that town yet.'

　　b. *Tā hái méi qù-guo [DP nà ge chéngshì]*
　　　3SG still NEG go-EXP 　　that CL town
　　　'He hasn't been to that town yet.'

By contrast, the default position for an *adjunct* indicating spatial location is to the right of negation and/or auxiliaries and it must then be encoded as a PreP:

(27) *Nǐ bù néng [PP *(zài) [PostP wòshì lǐ] fàng diànlú*
　　　2SG NEG can 　　at 　　bedroom in put electric.stove
　　　'You cannot put an electric stove in the bedroom.'

　　Accordingly, the distribution of NPs and PostPs encoding *spatial* location is as follows. When arguments, they can be fronted to a preverbal position above negation and auxiliaries (cf. [22], [25a], [26a]), but when assuming the role of adjunct ("place where") and occurring to the right of the subject, spatial location phrases must be encoded as PrePs, where the preposition either selects an inherently locative noun such as *chéngshì* 'city, town' (cf. [24a]) or a PostP such as *zhuōzi xià* 'table under' or *wòshì lǐ* 'bedroom in' (cf. [23], [27]).

　　To summarize, the alleged general unacceptability of PostPs in a TP-internal preverbal position stated by Huang, Li and Li (2009: 21) holds for adjunct phrases encoding spatial location only; by contrast, adjunct PostPs expressing temporal or abstract location display the same distribution as adjunct PrePs and can occur preverbally to the left and the right of the subject.

4.3.2 Argument PostPs

When selected as argument by a verb, a PostP occurs in the postverbal position. In this respect PostPs are again on a par with PrePs, which display the same adjunct – argument asymmetry (cf. chapter 3.4.2 above).

(28)   *Tā zǒu -jìn -le [PostP jiàoshì   lǐ]*
        3SG walk-enter-PERF   classroom in
        'He entered the classroom.'

(29)   *Tā de gùshi dēng -zài -le [PostP bàozhǐ shàng]*
        3SG SUB story publish-be.at-PERF   paper   on
        'His story got published in the newspaper.'

(30)   *Tā yī xià tiào -dào -le [PostP wǔ mǐ   yǐwài]*
        3SG 1 time jump-reach-PERF   5   meter beyond
        'He directly jumped further than five meters.'

(31)   *Tā zhǐ néng ná [PostP liùshí fēn   yǐshàng]*
        3SG only can obtain   60   point above
        'He can only obtain a little over sixty points.'

As the position of the perfective aspect suffix *-le* indicates, in (28) to (30), the verbs *dào* and *zài* – homophonous with the prepositions *dào* and *zài* – are part of the verbal compound. Accordingly, sentences (28) to (30) indeed involve PostPs in object position, and not PrePs.

    Unlike the VP-internal complement position, the subject position allows us to distinguish between PrePs and PostPs on the one hand, and PostPs and DPs, on the other.

    PostPs occur in the subject position of locative inversion sentences like (32), and of existential, presentative sentences with either the verb *yǒu* 'exist' (cf. [33a] and [33b])[13] or the copula *shì* 'be' (in combination with an adverb of universal quantification, cf. [34]).

(32)   *[PostP Chēzi shàng] pā-zhe yī zhī māo*
        .   car   on   lie-DUR 1 CL cat
        'On the car is lying a cat.'

(33)   a. *[PostP Wūzi lǐ] yǒu hěn duō rén*
               room in have very much people

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13 Existential *yǒu* 'exist, there is' is an unaccusative verb distinct from the transitive verb *yǒu* 'have, own:

(i)   *Tā yǒu sān liàng qìchē*
        3SG have 3   CL   car
        'He has three cars.'

'There are many people in the room.'

b. *[PostP Zhèngwén yǐwài]* hái yǒu liǎng ge fùlù
       text.body beyond still have 2   CL   annex
'Besides the text itself, there are also two annexes.'

(Lü Shuxiang 2000[1980]: 618)

(34)   *[PostP Shān -pō   shàng]* quán shì lìzishù
             mountain-slope on   all   be chestnut.tree
'All over the mountain slope there are chestnut trees.'

The acceptability of toponyms (e.g. *Běijīng*) and inherently locative nouns (e.g. *zhè ge dìfāng* 'this place') including location nouns such as *shàngbiān* 'upper side' indicates that the subject in these constructions must denote a place. Accordingly, nouns that do not inherently denote a location (e.g. *wūzi* 'room', *chēzi* 'car', *shānpō* 'mountain slope') are unacceptable here (cf. [37a] – [37c]), unless they are embedded in a PostP as in (32) – (34).

(35)   *[DP Beijing/zhè ge dìfāng]* yǒu hěn duō rén
             Beijing/this CL place   have very much people
'There are many people in Beijing/in this place.'

(36)   *[NP Shàngbiān]* pā-zhe yī zhī māo
             upper.side lie-DUR 1 CL cat
'On the top lies a cat.'

(37)   a. **[NP Wūzi]* yǒu hěn duō rén
                room have very much people

       b. **[NP Chēzi]* pā-zhe yī zhī māo
                car   lie-DUR 1 CL cat

       c. **[NP Shān -pō]* quán shì lìzishù
                mountain-slope all   be chestnut.tree

In contrast to PostPs, PrePs are unacceptable in the locative inversion construction and the existential construction with *yǒu* 'exist':

(38)   a. **[PreP Zài chēzi shàng]* pā-zhe yī zhī māo
                at   car   on   lie-DUR 1 CL cat

b *[*PreP* *Zài wūzi lǐ*] *yǒu hěn duō rén.*
      at   room in have very much people

Similarly, PrePs are disallowed as subjects of adjectival predicates, while PostPs in this position are of variable acceptability (marked as #), depending on the speaker:

(39)   [*PostP* Wūzi lǐ] / *[*PreP* zài wūzi lǐ] hěn gānjìng
          room in /   at room in very clean
          'It is very clean in the room.'

(40)   #[*PostP* Lúzi qián   ] /*[*PreP* zài lúzi qián   ] hěn nuǎnhuo[14]
          stove in.front.of/   at stove in.front.of very warm
          'It is very warm in front of the stove.'

Finally, sentences with the copula *shì* allow us to distinguish between NPs, PostPs, and PrePs. Nominal subjects are of course completely acceptable; PostPs are of marginal or variable acceptability (marked as #) depending on the speaker, while PrePs are completely unacceptable:

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14 There is an alternative parsing of (40) available for some speakers leading to the acceptability of the PreP in subject position:

(i)   [*TopP* [*Prep* *Zài lúzi   qián*   ] [*TP* pro *hěn nuǎnhuo*]]
             at   stove in.front.of   very warm
            'In front of the stove, we are warm/it is warm .'

When embedded in a relative, however, the *zài* PreP cannot be construed as occupying topic position, and the sentence is ungrammatical:

(ii)   *[*DP*[*PreP* *Zài lúzi   qián*   ] *hěn nuǎnhuo de nà jiān fáng*] *shì kètīng*
           at   stove in.front.of very warm   SUB that CL   room be living.room
           'The room where it is very warm in front of the stove is the living room.'

Similarly, some speakers can parse the sentence-initial PreP in the existential construction with *yǒu* (cf. [38a] above) as occupying the topic position and then accept sentences of the format in (iii):

(iii)   [*TopP* [*PreP* *Zài wūzi lǐ*] [*TP* *yǒu* *hěn duō* *rén*]]
             at   room in   have very much people
           'In the room there are many people.'

Most speakers, however, analyse the sentence-intial PreP as the subject and accordingly reject the sentence:

(iv)   *[*TP* [*PreP* *Zài wūzi lǐ*] *yǒu* *hěn duō* *rén*]
             at   room in have very much people

(41) a. [*NP* *Bìlú]*   *shì jiāli   zuì   nuǎnhuo de dìfāng*
           fire.place be home most warm   SUB place
           'The fire place is the warmest place in our home.'

      b. #[*PostP* *Lúzi   qián   ] shì zuì   nuǎnhuo de dìfāng*[15]
              stove in.front.of be most warm   SUB place
           'In front of the stove is the warmest place.'

      c. *Yào shuì jiào,* [*PostP* *xīngkōng xià] shì zuì   hǎo   de   dìfāng*
           want sleep sleep   star   under be most good SUB place
           'If you want to sleep, under the stars is the best place.'

                                           (based on Y.-H. Audrey Li 1990:30; [29c])

(42)   *[*PreP* *Zài lúzi   qián   ] shì zuì   nuǎnhuo de dìfāng*
              at stove in.front.of be most warm   SUB place
       ('In front of the stove is the warmest place.')

Y.-H. Audrey Li (1990: 2.2.4) explains the unacceptability of PrePs in subject
position in terms of Stowell's (1981: 146) *Case resistance principle*; since the
subject position is a case position, PrePs are excluded here because headed by a
case-assigning element (the preposition) themselves. The fact that PostPs are
acceptable in subject position makes them pattern with NPs, hence confirming
their nominal status (and their contrast with PrePs). However, as discussed by
Y.H. Audrey Li (1990: 2.2.4) herself, this case-based account is not without prob-
lems, because *inter alia* it wrongly rules out PrePs with a PreP complement such
as [*PreP* *from* [*PreP* *behind the door*]. In addition, to subsume PostPs under NPs
cannot account for the variation in the acceptability of PostP subjects observed
above, contrasting with the consistent acceptability of NP subjects; relevant
factors underlying this variation are the type of predicate (adjectival predicate
vs copula), but also idiolectal differences among native speakers. Similarly,
while it is correct that the subject in locative inversion and in existen-
tial/presentative sentences must denote a place and accordingly allows both for
inherently locative nouns and PostPs, this does not entail that the latter are
nominal as well. On the contrary, as to be discussed in section 4.4 below, the

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15 Native speakers rejecting PostP subjects in copular sentences such as (41b) improve the
sentence by construing the PostP as a modifier of an NP:
(i)   [*DP*[*PostP* *Lúzi   qián]   de zhè kuài dì] shì zuì   nuǎnhuo de   dìfāng*
               stove in.front.of SUB this CL   floor be most warm   SUB place
        'The spot in front of the stove is the warmest place.'

distribution of CircPs suggests that the subject position is reserved for XPs denoting Place to the exclusion of XPs denoting Path, where Place and Path do not automatically coincide with PostPs and PrePs, respectively. Finally, when going beyond spatial location and including examples with PostPs encoding temporal location, the postulated parallel between NPs and PostPs with respect to their acceptability in subject position collapses, thus confirming their categorial distinctness:

(43) a. *[_TP_ [_PostP_ *Jīnnián   nián-chū   yǐlái]   guò   de   tài   kuài]*
            this.year year-start since pass DE   too fast
         (Intended meaning: 'The time since the beginning of this year has
          passed too fast.')

      b. *[_TopP_ [_PostP_ Jīnnián   nián-chū   yǐlái] [_TP_ shíjiān   guò   de   tài   kuài]]*
            this.year year-start since   time   pass DE   too fast
         'Since the beginning of this year, time has passed too fast.'

(44)   *[_TopP_ [_PostP_ Shǔjià   yǐhòu] [_TP_ pro tài   wǎn]   le]*
          summer.holidays after   too late   SFP
         'After the holidays (it) will be too late.'

In (43), *jīnnián nián-chū yǐlái* 'since the beginning of this year' can only be understood as an adjunct and an explicit subject *shíjiān* 'time' is required. In (44), the temporal PostP likewise functions as a temporal adjunct only and a null subject (indicated by *pro*) corresponding to English *it* and referring to an antecedent in the preceding linguistic or non-linguistic context must be postulated.

   Summarizing, both PrePs and PostPs may appear in postverbal position when selected as an argument by a verb. PostPs encoding spatial location (in contrast to PostPs encoding temporal location) may occur as the subjects of locative inversion and (with variable acceptability) of adjectival and copular predicates, whereas PrePs are disallowed in these positions. Finally, the ban on postposition stranding and the unacceptability of *de* between the complement and the postpositional head clearly argue for their adpositional status and cannot be captured by an analysis which assigns them nominal status.

4.3.3 PostPs as subconstituents of DP

To complete the overview of the distribution of PostPs, let us examine the acceptability of PostPs as modifier phrases in the DP.

(45)   [_DP_[_PostP_ *Cāochǎng   shàng/wūzi   lǐ] de rén]*
                sports.ground on   / room   in SUB person
        dōu shì tā de xuéshēng
        all be 3SG SUB student
        'The people on the sports ground/in the house are all her students.'

(46)   [_DP_[_PostP_ *Wǔ diǎnzhōng yǐhòu] de dìtiě], rén   tài duō*
                5   o'clock   after SUB subway person too much
        'The subway after five o'clock, there are too many people.'

(47)   *Wǒ bù xǐhuān* [_DP_[_PostP_ *bā diǎnzhōng yǐqián] de kè]]*
        1SG NEG like   8 o'clock   before SUB class
        'I don't like classes before 8 o'clock.'

(48)   *Zhè shì* [_DP_[_PostP_ *luójì shàng] de cuòwù]*
        this be   logic on   SUB mistake
        'This is a logical error.'

(49)   [_DP_[_PostP_ *jīnnián   nián-chū yǐlái] de tiānqì*
                this.year year-start since SUB weather
        'the weather since the beginning of this year'

(50)   [_DP_[_PostP_ *xuéxiào lǐ] de guānxi]*
                school in SUB relation
        'the relations within the school'

(51)   [_DP_[_PostP_ *lǐlùn   shàng] de máodùn]*
                theory on   SUB contradiction
        'theoretical contradictions'

PostP modifiers are compatible with non-relational nouns (cf. [45] – [49]) and relational nouns (cf. [50], [51]) alike. In this respect, they clearly differ from PrePs which are only acceptable as modifiers of relational nouns (cf. [52] – [55] vs [56] – [58] below):

(52)   [_DP_[_PreP_ *gēn Lǐ xiānshēng] de guānxi]*
                with Li Mr.   SUB relation
        'the relation with Mr. Li'

(53)   [_DP_[_PreP_ *guānyú*   *Chomsky] de kànfǎ]*
                 concerning Chomsky SUB opinion
       'the opinions about Chomsky'

(54)   [_DP_[_PreP_ *guānyú*   *tiānwénxué] de zhīshi]*
                 concerning astronomy   SUB knowledge
       'knowledge about astronomy'

(55)   [_DP_[_PreP_ *duì*   *Lǐ xiānshēng] de tàidu]*
                 towards Li Mr.   SUB attitude
       'the attitude towards Mr. Li'

(56)   *[_DP_[_PreP_ *duì*   *Lǐ xiānshēng] de huà]*
                 towards Li Mr.   SUB word
       ('the words towards Mr. Li')

(57)   *[_DP_[_PreP_ *cóng Běijīng] de rén]*
                 from Beijing SUB person
       ('a person from Beijing')

(58)   *[_DP_[_PreP_ *gēn gǒu] de xiǎohái]*
                 with dog SUB child
       ('the child with the dog ')

Examples such as (52) – (55) show that Y.-H. Audrey Li's (1990: 5) general ban on Prep modifiers: *[PP *de* N] is too strong, because valid for DPs headed by non-relational nouns only.[16] To dismiss these potential counterexamples by postulating an underlying *clausal* structure for PrePs headed by *duì* 'towards' and *guānyú* 'concerning' in DPs (cf. Y.-H. Audrey Li 2008) can rule in the acceptable cases while maintaining the ban *[PP *de* N], but leaves open the question why such an underlying clausal structure is not available in the unaccept-

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16 Based on examples (i) and (ii), Ernst (1988: 239, footnote 10) also challenges the overall ban against PreP modifiers, but does not notice that the pattern is limited to relational nouns:

(i)   *duì   guójiā de rè'ài*
       towards   country SUB love
       'love of (one's) country'

(ii)   *guānyú zhè jiàn shì   de wèntí*
       about   this CL matter SUB problem
       'the problem with this matter'

able (56). Accordingly, the nature of the noun (relational or not) seems after all to play a role here, as does the type of the PreP (cf. section 4.4.3 below).

Note in passing that the restricted acceptability of PreP modifiers in DPs provides another argument against the verbal status of prepositions, given that relative clauses are not sensitive to the (non-) relational character of the head noun:

(59) a. *[DP[TP Tā [PreP duì   Lǐ xiānshēng] shuō] de huà]*
              3SG   towards Li Mr.   talk   SUB word
         'the words he addressed to Mr. Li'

     b. *[DP [TP [PreP cóng Běijīng] lái] de xuéshēng]*
                 from Beijing come   SUB student
           'the students coming from Beijing'

To summarize, when embedded as modifier in a DP, PostPs pattern with NPs and contrast with PrePs, because the latter are only acceptable as modifiers of relational nouns. Concerning the subject position of the locative inversion construction and existential/presentative sentences examined in the preceding section 4.3.2, PrePs are again excluded here, whereas PostPs and inherently locative nouns are acceptable. It is probably this distributional parallel between PostPs and NPs which is at the origin of the nominal analysis of postpositions commonly assumed in most of the literature. However, as demonstrated in detail above, a nominal analysis cannot account for the two major syntactic differences between nouns and postpositions, viz. the unacceptability of the subordinator *de* between a postposition and its complement and the ban on postposition stranding, nor for the lack of "corresponding" nouns in the case of temporal location (cf. *yǐhòu* 'after, later', *yǐlái* 'since'). It does not do justice, either, to the meaning differences observed between (location) nouns and postpositions. An explanation of why in certain respects PostPs pattern with (location) NPs and contrast with PrePs is provided in the following section on circumpositional phrases.

4.4 Circumpositional Phrases

Circumpositional Phrases (CircP) are complex adpositional phrases (AdP) containing both a preposition and a postposition, such as *zài zhuōzi xià/shàng* 'at

table under/on' = 'under/on the table' already encountered above (cf. [23]).[17] In the Chinese literature they are in general treated as a "discontinuous" constituent and noted as e.g. *zài...xià*, thus capturing the obligatoriness of the postposition for nouns that do not inherently denote location: **zài zhuōzi* 'at table'; their inner hierarchical structure, however, is simply left open.[18] By contrast, Y.-H. Audrey Li (1990: 31–33) explicitly opts for a structure where the preposition is the head and the PostP (her Localizer Phrase) the complement. Concentrating on spatial location involving the prepositions *zài* 'at'and *cóng* 'from', she deduces a "division of labour" for Chinese, absent from e.g. English: localizers fulfill the semantic function of turning a common noun into a place noun, whereas the preposition *zài* has the "pure syntactic" function of assigning case to such a place noun (headed by the localizer). This view based on a few cases of spatial location does, however, not do justice to the full array of data. Besides the considerable number of prepositions with a clearly identifiable lexical meaning such as *yánzhe* 'along', *cháo* 'facing, toward', *chúle* 'except for', *wèile* 'for the sake of', *yīnwèi* 'because of', *zìcóng* 'since' etc. (cf. the list under [1] in chapter 3), the structure [PreP Prep [PostP XP Postp]] cannot be applied to all CircPs, in particular it does not hold for CircPs denoting temporal. As we will see in the remainder of this section, in order to determine the internal structure of the latter it is necessary to go beyond the Chinese case and to inquire about the constraints governing AdPs expressing spatial, temporal and abstract location across languages. These general inquiries also shed light on certain parallels between locative NPs and spatial PostPs observed in the course of this chapter. In this context, the comparison with German, a language which like Chinese has both prepositions and postpositions, turns out to be particularly profitable.

4.4.1 Path vs Place
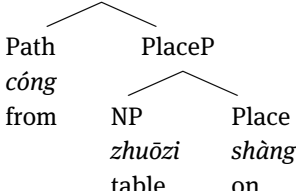
In the previous sections, postpositions were shown not to be nouns, but to instantiate the category *adposition*, along with prepositions. However, there also

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17 In the following, AdP is used as a cover term for PrePs, PostPs and CircPs.
18 Liu Danqing (2004: 171–173) is a notable exception, using the constituency test [PostP *zhuōzi xià*] 'table under' vs *[Prep *zài zhuōzi*] 'at table' to obtain the structure [PreP *zài* [PostP *zhuōzi xià*]] (cf. section 4.4.1 immediately below). He is also one of the few authors acknowledging the existence of both prepositions and postpositions in Chinese, without discussing the evidence for their adpositional status, though. Note that Liu Danqing (2004: 144–145) includes elements which are not adpositions, such as *bǎ* (which he incorrectly analyses as a preposition; cf. chapter 2.2.2 above) and the subordinator *de* (an alleged postposition for him).

emerged a number of specific differences between prepositions and postpositions. In this section these differences are accounted for by using the dichotomy 'Path vs Place', equivalent to the dichotomy 'Location vs Direction' well-known from the literature on spatial expressions since Jackendoff (1990), van Riemsdijk (1990) and others.

In an insightful discussion, Svenonius (2007) observes that Chinese prepositions denote Path, while postpositions denote Place; Svenonius also notices that postpositions form a closer bond with their NP complement than prepositions (thus obtaining the same relative hierarchy as Y.-H. Audrey 1990). In the articulated AdP structure developed by Svenonius (2007) and later work (cf. among others the papers in Cinque and Rizzi 2010), a projection headed by adpositions denoting Path dominates a projection denoting Place, as illustrated in (60):

(60)　　　　　　　PathP

Path　　　PlaceP
cóng
from　　NP　　　Place
　　　zhuōzi　*shàng*
　　　table　　on
　　　'from the table' (cf. [61] below)

(61)　　*Māo cóng zhuōzi shàng tiàoxiàlai -le*
　　　　cat　from table　on　jump.down-PERF
　　　　'The cat jumped down from the table.'

(62)　　*Ta dào fángzi lǐ qù-le*
　　　　3SG to　house in go-PERF
　　　　'He went into the house.'

While the association of Place with the postpositions *shàng* 'on' and *lǐ* 'in' etc. and that between the prepositions *cong* 'from' and *dào* 'to' with Path looks straightforward enough, the instances where it is the preposition *zài* 'at' that selects a PostP (cf. [63] – [66] below) seem at first sight not to fit into that pattern. For *zài* appears to denote Place, rather than Path. (Note that Svenonius [2007] does not discuss the apparent contradiction between the meaning of *zài* 'at' and his analysis of *zài* as Path.)

(63) *Tā [PreP zài [PostP píbāo   lǐ]] fàng-le tài duō   dōngxī*
      3SG   at   handbag in   put -PERF too much thing
      'He put too many things in the handbag.'

(64) *Wǒmen [PreP zài [PostP jiérì   lǐ]] bù shàng bān*
      1PL   at   holiday in NEG go   work
      'We do not work on holidays.'

(65) *Tāmen měi -tiān [PreP zài [PostP dìtiě   shàng]] jiàn miàn*
      3PL   every-day   at   subway on   see face
      'They meet in the subway every day.'

(66) *Tā [PreP zài [PostP lǐlùn   shàng]] shuō de duì*
      3SG   at   theory on   speak DE correct
      'She was right theory-wise.'

As noted by Y.-H. Audrey Li (1990: 32), *zài* 'at' is also the most ubiquitous preposition in CircPs, where the exact position is specified by the postposition (*lǐ* 'in' vs *shàng* 'on' vs *xià* 'under' etc.), not by *zài* 'at'. On the other hand, it is clear that *zài* heads the CircP, [PreP *zài* [PostP XP Postp]], because the well-formedness of the CircP depends on the satisfaction of the selectional requirements of *zài* to have a Place complement: nouns inherently denoting place such as *huǒchēzhàn* 'railway station', *lǐbiān* 'inside', toponyms such as *Tiān'ānmén* and *Běijīng* and PostPs with inherently non-locative nouns (including abstract and temporal nouns such as *lǐlùn* 'theory' and *jiérì* 'holiday') (cf. [67] – [70]). The same selectional requirements observed for *zài* 'at' also hold for the prepositions *cóng* 'from' (cf. [71] – [73]) and *dào* 'to' (cf. [74]) in CircPs denoting spatial and abstract location, thus confirming the analysis:[PreP *cóng/dào* [PostP XP Postp]] in (60) above.

(67) *Tā zài [NP lǐbiān] / [PostP píbāo   *(lǐ)] fàng-le tài duō   dōngxī*
      3SG at   inside/   handbag in   put -PERF too much thing
      'He put too many things inside/ in the handbag.'

(68) *Tāmen měi -tiān zài [PostP dìtiě   *(shàng)]/ Tiān'ānmén jiàn miàn*
      3PL   every.day at   subway on   / Tian'anmen see face
      'They meet in the subway/at Tian'anmen every day.'

(69) *Wǒmen zài [PostP jiérì   *(lǐ)] bù shàng bān*
      1PL   at   holiday in   NEG go   work

'We do not work on holidays.'

(70) *Tā zài [PostP lǐlùn *(shàng)] shuō de duì*
3SG at   theory on   speak DE correct
'She was right theory-wise.'

(71) *Māo cóng [NP shàngbiān]/[PostP zhuōzi *(shàng)] tiàoxiàlai -le*
cat from   upper.side /   table   on   jump.down-PERF
'The cat jumped down from above / from the table.'

(72) *Tā cóng Běijīng/[NP huǒchēzhàn]/[PostP yuànzi *(lǐ)] huílái-le*
3SG from Beijing/   station   /   courtyard in return-PERF
'He has come back from Beijing/the station/the courtyard.'

(73) *Nǐmen yīnggāi cóng [PostP gōngzuò *(shàng)] kǎolǜ*
2PL   need   from   wok   on   think
'You have to think about it from the point of view of the work.'

(74) *Ta dào Běijīng/ [NP lǐbiān]/[PostP fángzi *(li)] qù-le*
3SG to   Beijing/   inside/   house in go-PERF
'He went to Beijing/ inside/ into the house.'

Given *zài*'s ubiquity in CircPs and its minimal semantic import, *zài* 'at' can be considered a functional preposition, a prepositional light *p* (cf. Djamouri, Paul and Whitman 2009, 2013b) that selects a PlaceP, as do the path-denoting prepositions *cóng* and *dào*. In other words, while indeed *zài* can be considered as "semantically vacuous" as claimed by Y.-H. Audrey Li's (1990), this semantic vacuity does, however, not hold for prepositions in general, as evidenced by the CircPs headed by *cóng* 'from' and *dào* 'to' above and further illustrated in the remainder of this section. *Modulo* the special status of *zài* 'at', the CircPs headed by *zài* 'at', *cóng* 'from' and *dào* 'to' all involve the hierarchy 'Path over Place' observed for CircPs in many other languages (cf. among others van Riemsdijk 1990, Svenonius 2007, Cinque and Rizzi 2010).

The special status of *zài* as a functional preposition nicely ties in with the observation made in section 4.3.1 above that a spatial locative adjunct to the right of the subject cannot be expressed by a mere PlaceP (i.e. an inherently locative noun or a PostP), but must be encoded as a CircP headed by *zài* 'at':

(75) *Tā [PreP zài [PostP zhuōzi xià]] /*[PostP zhuōzi xià]*   (= [23] above)
3SG   at   table under /   table under

> *kàndào-le*   *yī zhī lǎoshǔ*
> see   -PERF 1 CL mouse
> 'He saw a mouse under the table.'

Recall that temporal and abstract location adjuncts in the same position are not subject to this constraint, nor does this constraint hold for the sentence-initial topic position to the left of the subject, where PostPs indicating all three types of location are acceptable.

Differences among prepositions are also well-known for other languages, and the term *functional preposition* has been employed here as well, although with a different coverage. Cinque (2010a: 4) divides prepositions into two classes: "simple" prepositions such as *at*, *to*, and *from*, which he considers to be *functional prepositions*, and "complex" prepositions such as *in front of*, *under*, *inside* etc. He observes for Italian that most complex prepositions can – and sometimes must – be followed by a functional one (*a* 'at, to' or *di* 'of'), as in the case of *accanto* 'beside':

(76)   *accanto *(a)   noi*
        next   at/to us
        'beside us'

Van Riemsdijk (1990) assigns the special status of functional adposition to postpositions in CircPs in German, for they are able to encode dimensions not expressed by lexical adpositions, such as the movement towards (cf. the prefix *her-*) or away (*hin-*) from a point of reference, which is generally the speaker:

(77)   *der Weg in das Tal   hinunter   / herunter*
        the way in the valley down[-proximal]/down[+proximal]
        'the way down into the valley'
        (N.B. The speaker is on the hill in the case of *hinunter* and down
         in the valley in the case of *herunter*)

This is in fact the exact opposite of Chinese where in a CircP headed by *zài* 'at' the precise semantics is provided by the PostP, not by the functional preposition *zài*. In other words, while the motivation underlying these and other studies is the same, i.e. the intention to capture the observed differences between (classes of) prepositions, the special functional status assigned to certain prepositions

and the properties associated with that status are not identical and seem to vary across languages.[19]

Against this background, Djamouri, Paul and Whitman (2013) propose that prepositions in Chinese by default indicate Path and consequently must select a PlaceP as complement, not another PathP, in accordance with the 'Path over Place' hierarchy. This explains why in Chinese prepositions may not select another PrepP, i.e. a PathP (cf. Y.-H. Audrey Li [1990: 33] for a pure case-based account).[20]

(78) a. *[*PreP* *cóng* [*PreP* *zài* [*cūnzi* *lǐ*]]]
　　　　　from　　at　　village　in

　　b. *[*PreP* *zài* [*PreP* *cóng* [*cūnzi* *lǐ*]]]
　　　　　at　　　from　village　in

(79) *[*PreP* *cóng* [*PreP* *yánzhe* *hébiān*]]
　　　　from　　　along　riverside

(80) a. *[*PreP* *Chúle* [*PreP* *gēn* *dàrén*]] *xiǎohái bù néng zuò diàntí*
　　　　　except　　with adult　child　NEG can sit lift

　　b. [*PreP* *Chúle* [*TP* pro [*PreP* *gēn* *dàrén*] *zài yīqǐ*],
　　　　　except　　　　　with adult　be together
　　　　xiǎohái bù néng zuò diàntí
　　　　child　NEG can　sit lift

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19 For Déchaine (2005), all prepositions instantiate a lexical category. She proposes to capture the observed differences among prepositions by the dichotomy between "light" and "full" prepositions, on a par with the distinction between "light verbs" (*do, make*) and "full" lexical verbs.

20 Comparatives seem to be the only exception to this generalization, where *bǐ* 'compared to' and *gēn* 'with, as' may select PrePs:

(i)　*Tā* [*PreP* *duì*　*nǐ*] *bǐ* [*PreP* *duì*　*wǒ*] *gèng*　*qíguài*
　　　3SG　towards 2SG BI　towards 1SG even.more bizarre
　　　'He acts even more strangely with you than with me.'

(ii)　*Tā* [*PreP* *duì*　*nǐ*] *gēn*　[*PreP* *duì*　*wǒ*] *yīyàng qíguài*.
　　　3SG　towards 2SG GEN　towards 1SG equally bizarre
　　　'He is as bizarre with you as with me.'

One might adopt Lin Jowang's (2009) analysis, where *bǐ* is not a preposition, but the head of a Degree phrase shell, which itself is adjoined to the Adjectival Phrase. The head Degree° can then either select NPs or PrePs.

'Except when accompanied by an adult, children are not allowed to take the lift.'[21]

(81) a. *Tā [PreP yīnwèi [PreP líle   lǐngdài] jiù bù   néng jìnqù[22]
      3SG because   without tie   then NEG can   enter

  b. Tā [PreP yīnwèi [TP pro bù chuān lǐngdài] jiù   bù néng jìnqù
      3SG because   NEG wear tie   then NEG can enter
      'Because he doesn't wear a tie, he cannot go in.'

As illustrated in (80) and (81), in order to render the intended meaning, the second PreP must be embedded in a clause, which in turn serves as complement of the first preposition. Note that the interdiction based on the 'Path over Place' hierarchy to select a PreP complement holds for prepositions in general, including those which cannot be straightforwardly associated with Path or Place, given that their meaning is not related to location in space, such as *gēn* 'with', *yīnwèi* 'because', *líle* 'without' etc.

4.4.2 CircPs expressing temporal location – with a short excursion into German

So far the discussion has focused on CircPs indicating spatial and abstract location. Let us now turn to CircPs encoding temporal location and examine how the 'Path over Place' hierarchy formulated in terms of spatial location is imple-

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21 Note , though, that the reviewer reports the following acceptable sentences:
(i) Chúle [PreP zài xuéxiào], tā hái huì zài nǎlǐ   niàn shū?
     except   at school   3SG still will at where read book
     'Except at school, where else will he study?'
(ii) Chúle [PreP gēn nǐ], tā hái kěyǐ gēn shéi xué yìshù?
     except   with 2SG 3SG still can with who learn art
     'Except with you, who else can he study arts with?'
22 Both *yīnwèi* 'because (of)' and *chúle* 'except for, besides' can either take an NP or a clause as complement (also cf. the list under [1a] in chapter 3 above):
(i) Xiǎotián [PreP yīnwèi   [DP zhè jiàn shì]] hái shōudào-le   biǎoyáng
     Xiaotian   because.of   this CL matter still obtain -PERF praise
     'Xiaotian even got praised because of this matter.'   (Lü Shuxiang 2000[1980]: 622)
(ii) [PreP Chúle Lǎowáng], wǒ dōu tōngzhīdào-le
          except Laowang 1SG all contact   -PERF
       'I have contacted everybody except Laowang.'   (Lü Shuxiang 2000[1980]: 126)

mented here. Unfortunately, the general linguistics literature – including the recent book by Cinque and Rizzi (2010) – does not provide much guidance here, because it mostly concentrates on spatial location. As for the literature on Chinese, the situation is worse, because even an otherwise extremely comprehensive and detailed work such as Chao (1968) does not include temporal postpositions such as *yǐlái* 'since', *qǐ* 'starting from', *yǐhòu* 'after 'etc. when discussing postpositions in general, let alone CircPs featuring these postpositions.[23]

Let us first examine the CircP *cóng XP qǐ* 'from XP on'.

(82) *Cóng míngtiān   qǐ, wǒ kāishǐ xīn   de gōngzuò*
from tomorrow on 1SG start   new SUB work
'From tomorrow on, I start a new job.'

In fact, the English CircP *from XP on* and its German equivalent *von XP an* present the same problem with respect to their internal hierarchical structure as the Chinese case. The constituency, [PostP [PreP *cóng* XP] *qǐ*], [PostP [PreP *from* XP] *on*] and [PostP [PreP *von* XP] *an*] to be adopted here is therefore based on the same test in the three languages, i.e. the non-existence of [NP *qǐ*], [XP *on*] and [XP *an*] as independent constituents:

(83) #*Míngtiān   qǐ, wǒ kāishǐ xīn   de gōngzuò*[24]
tomorrow on 1SG start   new SUB work

(84) a. *[PostP [PP from tomorrow] on]*

b. * *tomorrow on*

(85) a. *[PostP [PreP von   morgen   ] an]*
from   tomorrow on

b. **morgen   an*
tomorrow on

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23 To be precise, Chao (1968: 119, 549) mentions *yǐqián* 'before' and *yǐhòu* 'after, later' in the context of a general discussion of how to express time relations in Chinese.

24 Quite a few speakers also accept the simple PostP 'NP *qǐ*' as in *míngtiān qǐ* 'starting from tomorrow', in addition to *cóng* NP *qǐ* 'from NP on'. Note, though, that the fact observed in (86) below confirms the internal hierarchy posited for the CircP headed by *qǐ*: [PostP [PreP *cóng* NP] *qǐ*].

The analysis in terms of [PostP [PreP Prep XP] Postp] is confirmed by the unaccept-ability of (86) where *cóng* 'from' has been replaced by *zìcóng* 'since'; like *since* in English, *zìcóng* 'since' only selects a point in time situated in the past and is therefore incompatible with *míngtiān* 'tomorrow':

(86)   *[PostP[PreP   *zìcóng míngtiān*   ] *qǐ*]
                       since   tomorrow   on
       *'since tomorrow on'

By contrast, *cóng* 'from' does not impose a similar constraint and accordingly, *cóng* XP *qǐ* can refer to a point in the past, present or future, again like *from* XP *on* in English (*modulo* the use of *since* when referring to the past):

(87)   *Cóng { qùnián   / xiànzai/ míngtiān}   qǐ,   wǒ   jiù   bù   chōu   yān   le*
       from   last.year/now   / tomorrow   on   1SG   then   NEG   inhale   smoke   SFP
       'Since last year, I have stopped smoking.'
       'From now/tomorrow on, I will no longer smoke.'

This contrast between *cóng* and *zìcóng* can be straightforwardly accounted for if the NP is the complement of the preposition and must therefore satisfy its selec-tional restriction. If, however, the structure [Prep *cóng/zìcóng* [PostP NP *qǐ*]] were posited, the contrast would be very difficult to explain, because as just illus-trated in (87), *qǐ* 'starting from' is compatible with the past, present and future.

Given that the open interval expressed by the postposition *qǐ* 'starting from, on' can be assimilated to Path, and the starting point of the interval encoded by the *cóng* PreP to Place, we observe the same 'Path over Place' hierarchy as in the cases involving spatial or abstract location.

However, as the attentive reader may have noticed, this leads to an appar-ent contradiction concerning the status of the preposition *cóng* 'from, since', which in the spatial locative CircPs (e.g. *[PreP cóng [PostP zhuōzi shàng]* 'from table on' = 'from the table'; cf. [61]) assumes the role of Path and therefore selects the Place PostP as its complement. This situation clearly forces us to distinguish between spatial location, on the one hand, and temporal location, on the other. In other words, 'Path' as the default function for Chinese prepositions holds for spatial location only, because when dominated by a Path indicating adposition in temporal CircPs, the PreP is "relegated" to indicating Place or point in time, respectively. Again this is not specific to Chinese, but is also observed in other languages.

In English, for example, *from* shows the same two roles as *cóng* 'from' in Chinese, depending on whether the AdP in question indicates spatial or tempo-

ral location. In *[from [behind the house]*, *from* clearly indicates Path (and *behind the house* Place), as illustrated in *He came out/*stayed [from behind the house]*. In *[[from tomorrow] on]*, however, *on* denotes the open interval corresponding to Path, while *from tomorrow* encodes a point in time corresponding to Place.

Van Riemsdijk and Huijbregts (2007: 18, footnote 19) observe a similar situation for German where the same preposition indicates either Path or Place, depending on whether it occurs on its own or embedded in a CircP. As illustrated in (88), the preposition *an* 'at, to' requires a complement in the dative case when indicating Place, but accusative case for Path:

(88) a. *Er sitzt oft [ₚᵣₑₚ an dem Flussufer]*
          he sits often   at the꜀ᴅᴀᴛ riverside
          'He often sits at the riverside.'

      b. *Er geht oft [ₚᵣₑₚ an das Flussufer*
          he goes often   at the꜀ᴀᴄᴄ riverside
          'He often goes to the riverside.'

When the PreP headed by *an* 'at, to' is selected as the complement of a Path postposition such as *entlang* 'along', however, this PreP can indicate Place only, as illustrated by the unacceptability of the accusative here:

(89) *Er geht oft [ₚₒₛₜₚ[ₚᵣₑₚ an dem /*das Flussufer] entlang] spazieren*
       3sɢ go often   at the꜀ᴅᴀᴛ/ the꜀ᴀᴄᴄ riverside along stroll
       'He often strolls along the riverside.'

Again, the 'Path over Place' hierarchy remains valid, while the function of a given preposition itself may oscillate between Path and Place depending on the context (cf. [88]).

For the CircPs discussed so far, the internal structure can be determined rather easily, because the postposition in question cannot form a constituent with the preceding NP. By contrast, CircPs of the form *zìcóng* XP *yǐlái* 'from XP since' = 'since XP' (cf. [90a]) are less straightforward, because both sequences [ₚᵣₑₚ *zìcóng* XP] (90b) and [ₚₒₛₜₚ XP *yǐlái*] (90c) are well-formed:

(90) a. *Zìcóng [ɴₚ jīnnián nián-chū] yǐlái*
          from   this.year year-beginning since
          tā yǐjīng chū-le sān cì chāi
          3sɢ alread exit-ᴘᴇʀꜰ 3 time business.trip

'Since the beginning of this year, he has already been three times on
business trips.'

b. *Zìcóng {[_{NP} jīnnián   nián-chū   ] / [_{TP} tā shàng-le   daxué]}*
    from   this.year year-beginning/ 3SG go -PERF university
    wǒ jiù   méi shōudào tā de xìn
    1SG then NEG receive 3SG SUB letter
    '{Since the beginning of the year/ Since he entered university},
     I haven't had any mail from him.'

c. *{[_{NP} jīnnián   nián-chū   ]/[_{TP} tā dào   zhōngguó]} yǐlái]*
    this.year year-beginning/   3SG arrive China   since
    'since the beginning of this year/ since he came to China'

However, taking a closer look at the selectional restrictions, we see that *yǐlái*
'since' is not compatible with a time span such as *sān-niān* 'three years', but
requires a point in time. This point in time can take on the form of an NP, a
clause or a PreP, all the three of which represent possible complements of *yǐlái*
'since'.[25] *Yǐlái* is thus the exact opposite of the postposition *lái* 'during, for'
which selects an XP indicating a time span (91a) and which is incompatible with
XPs indicating a point in time, be it a clause (91b), a PreP or an NP (91c):

(91) a. *[_{PostP} [Sān nián]{*yǐlái / lái   }]*
            3   year   since/ during
          tā měitiān   zǎoshàng liàn   tàijíquán
          3SG every.day morning   practise taijiquan
          'For three years now he has been practising Tai Chi every morning.'

      b. *[_{TP} Wǒ [_{PostP}[_{TP} pro dào   zhōngguó] {yǐlái /*lái }]*
            1SG   arrive China   since/ during
          jiù méi chī-guo yī cì xīfàn
          then NEG eat-EXP 1 CL Western.food
          'Since I arrived in China, I haven't once eaten Western style food.'

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25 This is different from Liu Danqing (2004: 172) who on the basis of a single example extends
the structure proposed for spatial location CircPs to the temporal CircP, thus obtaining
[_{PreP} *cóng* [_{PostP} XP *yǐlái*]].

c. [$_{PostP}$[$_{PreP/NP}$ *(cóng) jīnnián   nián-chū   ] {yǐlái /*lái}*]
        from this.year year-beginning   since/ during
    'since the beginning of this year'

Again, as in the case of [$_{PostP}$ [$_{PreP}$ *cóng* XP] *qǐ*] 'from XP on', the postposition denoting an open interval, i.e. *yǐlái* 'since' heads the CircP and selects the preceding phrase expressing a point in time (NP, PreP or clause) as its complement, in accordance with the 'Path over Place' hierarchy.

Yǐhòu 'after' is another temporal postposition selecting either an NP, a clause or a PreP. Like *yǐlái* 'since' it denotes an open interval and therefore is the head of the CircP in the presence of a PreP complement, i.e. we obtain the structure [$_{PostP}$ [$_{PP}$ *zìcóng* XP] *yǐhòu*]:[26]

(92)   [$_{PostP}$ *Wǔyuèfèn* /[$_{TP}$ *tā   bān   jiā] yǐhòu*]
            May   / 3SG move home after
    wǒ jiù   méi shōudào tā de xìn
    1SG then NEG receive 3SG SUB letter
    'Since May/since he moved, I haven't had any letters from him.'

(93)   [$_{PostpP}$ [$_{PP}$ *Zìcóng* [$_{TP}$ *tā   shàng dàxué   ]] yǐhòu*]]
            since   3SG go   university after
    wǒmen yīzhí   méi jiàn miàn
    1PL   always NEG see   face
    'Since he entered university, we haven't met anymore.'

Finally, it is important to point out that the case of CircPs with *zài* is different insofar as it is always *zài* that is the head here, irrespective of whether the CircP indicates spatial, temporal or abstract location. This is due to *zài*'s special status as a functional preposition outlined in the preceding section 4.4.1. Consequently, temporal CircPs such as [$_{PostP}$[$_{PreP}$ *cóng XP*] *yǐhòu*] 'after XP' with the postposition as head are acceptable as modifiers of non-relational nouns, on a par with "simple" PostPs such as [$_{PostP}$ *XP yǐhòu*] 'after XP'; by contrast, [$_{PreP}$ *zài* [$_{PostP}$ XP *yǐhòu*]] as a PreP is precisely excluded from this function (cf. section 4.3.3 above for spatial location PostPs as modifiers):

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26 Recall from the list given in (1) that *yǐhòu* 'after' and *yǐqián* 'before' indicate temporal location only, whereas *hòu* 'behind, after' and *qián* 'in front of, before' can denote both spatial and temporal location.

(94)   a.   *Tā   hái   jìde   [DP[Post [PreP   zìcóng   fùmǔ   lí   hūn   ]   yǐhòu]*
        3SG still remember   since parents separate marriage after
        de   tōngkǔ   jīnglì
        SUB painful experience

     b.   *Tā   hái   jìde   [DP[PostP   fùmǔ   lí   hūn   yǐhòu]*
        3SG still remember   parents separate marriage after
        de   tōngkǔ   jīnglì   ]
        SUB painful   experience
        'He still remembers the hard time after his parents had divorced.'

(95)   **Tā   hái   jìde   [DP[PreP zài [PostP   fùmǔ   lí   hūn   yǐhòu]]*
        3SG still remember   at   parents separate marriage after
        de   tōngkǔ   jīnglì   ]
        SUB painful experience

Recall from section 4.3.3 above that PrePs are only acceptable as modifiers of relational nouns, while PostPs are not subject to this constraint.

4.4.3 From here to eternity: *cóng* XP *dào* YP 'from XP to YP'[27]

The preceding discussion has demonstrated the importance of the dichotomy Path vs Place and the hierarchy 'Path over Place' as determining factors for the analysis of AdPs. Importantly, this hierarchy can also shed light on the structure of the AdP *cóng* XP *dào* YP 'from XP to YP'. While linguists in China have always been puzzled by its special properties distinguishing it from "orthodox" PrePs, in particular its ability to function as subject, to my knowledge it has not attracted any attention elsewhere and no formal analysis has been provided. The AdP *cóng* XP *dào* YP is either considered a quasi "serial verb construction" (Xing Fuyi 1980), a special type of conjoined structure with both *cóng* and *dào* as conjunctions (Yu Daguang 1980, Zhu Jun 2010), or assigned the status of a PreP, whose internal structure is, however, not spelt out and simply noted as '*cóng...dào...*' (Zhang Wenzhou 1980). The analysis I would like to propose and which was briefly alluded to in chapter 3.3 above is one where the preposition

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27   *From here to eternity* refers to the (irresistable) title of Fred Zinneman's 1953 award-winning movie based on a novel of the same name by James Jones (published by Scribner in 1951).

dào 'to, until' is the head, and where the *cóng* PreP as its modifier occupies the specifier position, leading to the structure: [*dàoPreP* [*congPreP* *cóng* XP] *dào* YP]:

(96) *[dàoPreP [congPreP Cóng [TP pro kāishǐ shàng xué]] dào(*-le) xiànzài]*
         from   start attend school to -PERF now
Xiǎohuá yīzhí   chéngjī hěn hǎo
Xiaohua always result   very good
'From when she started school until now, Xiaohua has always had
 good results.'   (Lü Shuxiang 2000 [1980]: 130)

Note that as indicated in (96) and holding for all instances of *dào* 'to, until' in combination with the *cóng* PreP (cf. [98] – [103] below), *dào* is incompatible with the aspectual suffix *-le* and therefore clearly a preposition here, thus contrasting with the verb *dào* 'arrive' allowing for *-le* (cf. [97] below and the discussion in chapter 3.3 above).

(97) *[TP Tā [[adj.clause dào (-le) wǎnshàng] [jiù [kàn   diànshì]]]*
       3SG   arrive-PERF evening   then watch television
'When the evening has come, he watches TV.'

(98) *Tāmen měitiān [daoPreP [congPreP cóng bā diǎn] dào liù diǎn]*
3PL   every.day   from 8   o'clock to   6   o'clock
shàng bān
attend work
'They work every day from 8 o'clock to 6 o'clock.'

(99) *[daoPreP[congPreP cóng [TP pro bù huì]] dào [TP pro huì]]*
              from   NEG know to   know
'from not knowing to knowing'   (Zhu Jun 2010: 74)

(100) a. *[daoPreP[congPreP Cóng sùshè] dào xiào ménkǒu]*
                   from dormitory to   school entrance
fēicháng   ānjīng
extremely   quiet
'It is extremely quiet from the dormitories to the school entrance.'
                                        (Xing Fuyi 1980: 346)

   b. *{[PostP Wūzi lǐ] /*[PreP zài wūzi lǐ]} fēicháng   ānjīng*
            room in /   at   room in extremely quiet
'It is extremely quiet in the room.'   (= [39] above])

(101) [daoPreP[congPreP *Cóng Shànghǎi] dào Hángzhōu] shì yībǎibāshíjiǔ gōnglǐ*
                    from Shanghai to   Hangzhou be 189   km
    'It is 189 km from Shanghai to Hangzhou.' (Zhang Wen-Zhou 1980: 175)

(102) a. *Tā tǎoyàn* [DP [dàoPreP [congPreP *cóng bā diǎn] dào shí diǎn]*
      3SG dislike   from 8   o'clock to   10 o'clock
      de   kè]
      SUB class
      'He dislikes classes from eight to ten o'clock.'

     b. *Wǒ bù xǐhuān* [DP [PostP *bā diǎn   yǐqián] de kè]*
      1SG NEG like   8   o'clock before SUB class
      'I don't like classes before eight o'clock.'   (= [47] above)

(103) a. [DP [dàoPreP[congPreP *Cóng qī suì dào shí suì]] de háizi] dōu lái-le*
                    from 7 year to 10   year SUB child all come-PERF
      'The children aged from seven to 10 years have all come.'

     b. * [DP [congPreP *cóng qī suì] de háizi]*
                from 7   year SUB child
      (Intended meaning: 'children starting from age 7')

Examining these examples in the light of the hierarchy 'Path over Place', the *cóng* PreP clearly refers to a point in space or time and thus assumes the Place function, while *dào* 'to, until' indicates Path; *dào* being the head and the *cóng* PreP its modifier, the 'Path over Place' hierarchy is respected. But in contrast to *yǐlái* 'since', *yǐhòu* 'after' etc., the path is a closed interval here, with the complement of *dào* providing its endpoint. As a result, the PreP '*cóng* XP *dào* YP' indicating either spatial ([100a], [101]), temporal ([96], [98]) or abstract ([99]) location indicates a time span or a path whose boundaries are marked, i.e. a delimited space, domain or time span. It is therefore not surprising that in syntax, this PreP patterns with phrases indicating a PlaceP, i.e. with toponyms, inherently locative nouns and PostPs. Consequently, *cóng* XP *dào* YP is fine in the subject position of sentences with an adjectival predicate (cf. [100a]) or the copula *shì* 'be' (cf. [101]), partly on a par with PostPs and in contrast to Path indicating PrePs (cf. [100b]); '*cóng* XP *dào* YP' can also modify non-relational nouns (cf. [102a], again like PostPs (cf. [102b]). Finally, as mentioned in chapter 3.3 above, the PreP headed by *dào* 'to' seems to be the only PreP allowing a modifer in its specifier position, the other prepositions in Chinese being "de-

generate" in the sense that they do not project a specifier position, an observation going back to C.-T. James Huang (1982: 27, 61).

4.5 Conclusion

Despite a non-negligible body of observations made over the past forty years converging in favour of the adpositional status of postpositions (cf. Chao 1968, Peyraube 1980, Lü Shuxiang 2000 [1980], Ernst 1988 among others), their categorial identity has remained controversial and they have mostly been conflated with nouns. It is true that the majority of these earlier studies concentrate on postpositions expressing spatial location; however, as demonstrated at length in this chapter, it is perfectly feasible to extend their observations to the entire domain of postpositions, including temporal and abstract location and to obtain the straightforward result of postpositions as adpositions, different from nouns.

As soon as postpositions are recognized as such, the 'Path over Place' hierarchy observed for many other languages (among them German, which like Chinese features both prepositions and postpositions) can be applied to CircPs of the form 'preposition XP postposition' in Chinese as well. In the case of spatial location, it is the preposition that indicates Path and we thus obtain the structure [$_{PreP}$ prep [$_{PostP}$ XP postp]] as in [$_{PreP}$ *cóng* [$_{PostP}$ *zhuōzi shàng*] 'from table on' = 'from the table'. By contrast, in the case of temporal location, Path is expressed by the postposition, thus leading to [$_{PostP}$ [$_{PreP}$ prep XP] postp] as the structure for *[$_{PostP}$ [$_{PreP}$ cóng míngtiān] qǐ]* 'from tomorrow on'. Given that *zài* 'at' as functional preposition is special among prepositions, it always heads the CircP it occurs in: [$_{PreP}$ *zài* [$_{PostP}$ XP postp]], irrespective of the type of location involved.

This asymmetry between spatial and temporal CircPs with respect to the categorial realization of Path vs Place (as preposition or postposition) is an additional argument against the nominal analysis of postpositions, because it makes it impossible to systematically equate Place with nouns (and Path with prepositions) as a last resort to rescue the analysis of postpositions as a subclass of nouns.

There is thus no room left for a hybrid category such as "categorial deviate of noun" recently proposed by Huang, Li and Li (2009: 17). Besides conceptual problems with hybrid categories in general and the inaccuracy demonstrated above of this approach for Chinese in particular, the 'categorial deviate of N' scenario simply falls short of postpositions that have been reanalysed from *verbs*, i.e. *lái* 'during, for', *qǐ* 'on(wards)' as well as the entire set of postpositions "prefixed" by *yǐ-* (cf. Djamouri and Paul 2012).

Note that once again the assumption of cross-categorial harmony as a principle determining the shape of synchronic grammar has played a crucial role in the attempts to relegate postpositions to nouns and to not acknowledge their adpositional status, notwithstanding the well-attested cases of genetically unrelated languages such as Mande (a Kwa language) and German featuring both prepositions and postpositions. The consequences for the concept of harmony of the mixed origin (nominal and verbal) of postpositions which in turn are members of the mixed category of adpositions in Chinese are explored in more detail in chapter 8.

5 Adjectives: Another neglected category – which turns out to be two

Adjectives are another illustration of how our preconceived ideas about isolating languages such as their allegedly "impoverished" categorial inventory lead to the acceptance of analyses which are much too superficial. Thus, the proposals by, among others, Larson (1991), McCawley (1992), and Tang Sze-Wing (1998), to conflate adjectives in Chinese with intransitive stative verbs have not aroused criticism, although for the most part relying on a very reduced data basis.[1] Interestingly, this contrasts neatly with the position adopted by Chinese grammarians working in the structuralist tradition back in the fifities and sixties of the last century, who simply took adjectives as a separate part of speech for granted, as witnessed by the numerous studies of adjectival modification published in the major journals of that period (cf. among others Zhu Dexi 1980 [1956], Xiao Fu 1956, Fan Jiyan 1958). Similarly, Sybesma (1991a, 1999a) and Paris (1989) presuppose the existence of adjectives as distinct from verbs in their discussion of degree adverbs. More recently, Huang, Li and Li (2009: 21–26) in a brief discussion likewise defend a pro-adjective view.

The present chapter takes up the traditional view and presents ample evidence in favour of adjectives as distinct from stative verbs. In fact, it goes a step further and argues that Chinese has as many as *two* morphologically different classes of adjectives with distinct semantic and syntactic properties, i.e. *simple adjectives* and *derived adjectives*. Although derived adjectives (subsuming e.g. reduplicated adjectives). have been much discussed in the Chinese literature, they have not been recognized as constituting a class different from that of simple adjectives. To obtain a correct picture of these issues is not only important for an adequate grammar of Chinese itself, but also for the growing number of typological studies of adjectival modification, whose view of Chinese has so far been much influenced by the (incorrect) description in Sproat and Shih (1988, 1991).

The first section, 5.1, is devoted to distinguishing (simple) adjectives from stative verbs. As observed for adjectives in other languages, adjectives in

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1 Likewise, Newmeyer (2005: 86) has no problem accepting Dixon's (1977) point of view that adjectives in Chinese (as well as in Thai and many Austronesian languages) are to be subsumed under the class of verbs.

Chinese also involve different semantic types (scalar vs absolute, intersective vs non-intersective adjectives), which in turn correlate with syntactic differences. Against this backdrop, section 5.2 addresses the issue of adjectival modification, which has been at the heart of typological studies. Two modification patterns with different semantic properties are established: 'A *de* N', where the subordinator *de* intervenes between the adjective and the head noun, on the one hand, and the case of simple juxtaposition of the adjective and the noun 'A N', on the other. This result invalidates an overall analysis of 'A N' sequences as compounds, i.e. as words (cf. Sproat & Shih 1988, 1991; Duanmu San 1998); it likewise challenges current proposals where all adnominal modifiers subordinated by *de* are either analysed as relative clauses (cf. Sproat & Shih 1988, 1991; Duanmu 1998; Simpson 2001) or as small clauses (Den Dikken & Singhapreecha 2004), an assumption relying on the conflation of adjectives with stative verbs. Section 5.3 once again takes up the issue of adjectives as a separate part of speech and introduces the class of *derived adjectives* in addition to the class of *simple adjectives* discussed so far. Their status as two distinct morpho-syntactic classes is backed up by a whole set of syntactic and semantic differences. Needless to say, the existence of two adjectival classes further supports the view defended here that adjectives cannot be conflated with verbs, but represent a separate category. The result obtained for Chinese thus challenges our preconceived ideas about isolating languages and their allegedly impoverished categorial inventory.

5.1 Adjectives as a distinct lexical category

Proposals defending the conflation of adjectives with stative verbs (cf. McCawley 1992, Larson 1991, Tang Sze-Wing 1998, Jimmy Lin 2004 among others) in general put forward the following two observations as supporting evidence. First, adjectives such as *cōngmíng* 'intelligent' function as predicates without the copula *shi* 'be', thereby contrasting with e.g. English where the copula is obligatory, as indicated in the translation of example (1):

(1)   *Zhāngsān   tèbié   cōngmíng*
      Zhangsan   particularly   intelligent
      'Zhangsan *(is) particularly intelligent.'

Second, when functioning as an adnominal modifier, the adjective is subordinated to the noun by *de*:

(2)   *yī ge cōngmíng de   rén*
        1 CL intelligent   SUB person
        'an intelligent person'

Since the same subordinator *de* also appears between a relative clause and the noun (cf. [3]), it has been suggested that a prenominal adjective followed by *de* should be analysed as a relative clause (cf. Sproat & Shih 1988, 1991; Duanmu San 1998, Simpson 2001 among others):

(3)   *[₍DP₎ yī ge [₍TP₎ Øᵢ xǐhuān xiào] de rénᵢ]*
          1 CL   like   laugh SUB person
        'a person who likes laughing'

According to this scenario, *yī-ge cōngmíng de rén* in (2) would represent a noun modified by a relative clause and hence should be translated as 'a person who is intelligent' rather than as 'an intelligent person'. This is precisely the view adopted by Sproat & Shih (1988, 1991), Duanmu (1998), and Simpson (2001) for whom all sequences 'adjective *de*' are equated with relative clauses.

However, as soon as a more representative array of data is taken into account (cf. below sections 5.1.1.– 5.1.4), the relative clause analysis of 'A *de* N' and the associated conflation of adjectives with verbs is straightforwardly invalidated.

5.1.1 Non-predicative adjectives vs predicative adjectives

As pointed out by Lü and Rao (1981), Chinese also has a large class of adjectives which require the copula *shi* and the particle *de* when functioning as predicates (cf. [4a], [5a]); *shi...de* is, however, excluded when these adjectives are modifiers within the DP, as in (4b) and (5b) (also cf. Paris 1979a: 61).[2]

(4)   a.   *Zhèi ge pánzi*(shì) fāng   *(de)*
             this CL plate   be square DE
             'This plate is square.'

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[2] Note that *de* in the *shi...de* construction with non-predicate adjectives is different from the subordinator *de* in the DP (cf. Paris 1979a: 60). They are therefore glossed differently as DE and SUB, respectively. Furthermore, the subordinator *de* is indexed with SUB in order to facilitate the parsing of examples with these two different *de*'s.

b. *Tā mǎi -le [DP yī ge (*shì) fāng   desub pánzi]*
   3SG buy-PERF 1 CL   be square SUB plate
   'He bought a square plate.'

(5) a. *Zhè jiān xǐshǒujiān *(shì) gōngyòng *(de)*
     this CL   bathroom   be   public   DE
     'This bathroom is public.'

   b. *Zhè shì [DP yī jiān *(shì) gōngyòng de xǐshǒujiān]*
      this be   1 CL   be   public   DE bathroom
      'This is a public bathroom .'

Given that (the majority of) adjectives such as *cōngmíng* 'intelligent' can func-
tion as predicates on their own (cf. [1] above), the class of adjectives requiring
shi...de is somewhat misleadingly referred to as *non-predicative adjectives* in
Chinese linguistics (cf. Lü and Rao 1981: 81). More precisely, this class of *non-
predicative adjectives* in Chinese includes both intersective adjectives (cf. [4], [5]
above) and non-intersective adjectives (cf. [6], [7] below); the latter – like their
counterparts in other languages – are completely excluded from the predicative
function (cf. [6a], [7a]), irrespective of *shi...de*.

(6) a. **Zhèi ge yǔyán   shì gòngtóng de*
     this CL language be common DE
     (*'This language is common.')

   b. *gòngtóng desub yǔyán*
      common SUB language
      'a common language'

(7) a. **Zhèi ge yìsi   shì yuánlái de*
     this CL meaning be original DE
     (*'This meaning is original.')

   b. *yuánlái desub yìsi*
      original SUB meaning
      'the original meaning'

Furthermore, from a semantic point of view, "predicative" adjectives in Chinese
of the type *cōngmíng* 'intelligent' coincide with scalar, gradable adjectives,
whereas "non-predicative" intersective adjectives in Chinese coincide with

absolute adjectives (cf. Paris 1979; cf. section 5.1.3 below for additional data and discussion). Note that in the remainder of this chapter, I use quotation marks when referring to the Chinese system of classifying adjectives: "predicative" adjectives function as predicates on their own (e.g. *cōngmíng* 'intelligent'), whereas "non-predicative" adjectives require *shi…de* in predicative function when intersective (e.g. *fāng* 'square'), or are excluded altogether from the predicative function when non-intersective (e.g. *yuánlái* 'former').

Given that "non-predicative" adjectives are precisely unable to function as predicates on their own, they clearly challenge an overall analysis of attributive adjectives as relative clauses, as proposed by Sproat & Shih (1988, 1991), Duanmu (1998), Simpson (2001) (the latter implementing Kayne 1994)), Liu Danqing (2005), as well as analyses deriving every modifier from an underlying predicate (Den Dikken & Singhapreecha 2004).[3] In any case, as discussed in detail in Paul (2005a, 2012, to appear), the wide range of non-predicative modifiers (DPs, NPs, PPs, adverbs) subordinated to the head noun by *de* presents a general problem for the derivation of all modifiers from underlying predicates (cf. chapter 3.3. for the impossibility of PPs to function as predicates). (For a critique of Simpson's (2001) uniform analysis of modifiers as relative clauses, also cf. C.-C. Jane Tang 2007.)

(8) [_DP_ *Měilì/ tāmen] de_sub_ péngyou*
          Mary/ 3PL   SUB   friend
     'Mary's friend/their friend'

(9) [_NP_ *bōli]   de_sub_ zhuōzi*
          glass SUB   table
     'a glass table'

(10) [_PP_ *duì   wèntí] de_sub_ kànfǎ*   (Lü Shuxiang (2000 [1980]): 157)
          towards problem SUB   opinion
     'an opinion about the problem'

(11) a. [_adv_ *lìlái]   de_sub_ xíguàn*   (Lü Shuxiang (2000 [1980]): 157)
              always SUB   habit

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3 Based on the class of *non-intersective* "non-predicative adjectives" ('original', 'former' etc., (cf. [6], [7]), Aoun & Li (2003: 148) likewise conclude that not all prenominal adjectives can be derived from relative clauses. However, they do not discuss *intersective* non-predicative adjectives (cf. [4], [5]) and accordingly fail to see the correlation between presence vs absence of *shì…de* and predicative vs attributive function.

'an old habit'

b. *[adv wànyī] desub jīhuì*
　　　in.case　SUB　occasion
'a rare occasion'

None of the modifier XPs in (8) to (11) can constitute a predicate, which further invalidates an overall relative clause analysis of adnominal modifiers in Chinese.

5.1.2 Adjectival reduplication vs repetition of the verb

The fact that adjectives are reduplicated according to a pattern different from that of verbs provides another argument against their conflation. More precisely, while verbs are repeated as a whole (cf. [12a-b]), each syllable is iterated with adjectives (cf. [13]). Consequently, for a disyllabic verb noted 'AB', we obtain two instances of the verb, [v° AB] [v° AB'], whereas the reduplication of a disyllabic adjective 'AB' results in one adjective of a new type, i.e. [Adj° AABB] (cf. section 5.3 below for further discussion):

(12)　a. *Qǐng　gěi wǒmen zhǐdian　zhǐdian/*zhǐzhǐdiǎndiǎn*
　　　　　please for 1PL　advise　advise
　　　　　'Please give us some advice (how to do it.).'

　　　b　*Nǐ kǎolü　　kǎolü　/*kǎokǎolǜlǜ*
　　　　　2SG think.over　think.over
　　　　　'Try to think it over.'

　　　c. *Nǐ chàng ge gē　ràng dàjiā　　huānxi huānxi/*huānhuānxǐxǐ*
　　　　　2SG sing　CL　song let　everybody enjoy　enjoy
　　　　　'Sing a song for everybody to enjoy.'

　　　d. *Ràng ta zhīdao zhīdao/*zhīzhīdaodao wǒ de　lìhài*
　　　　　let　3SG know　know　　　　　　　　1SG SUB (dis)advantages
　　　　　'Let him know my advantages and disadvantages.'

(Meng et al. 1984: 918)

(13) a. *Tā zǒngshì gāogāoxìngxìngde*[4]
   3SG always cheerful
   'He is always cheerful.'

   b. *Fángwū de_sub wàibiǎo pòpòlànlàn / *pòlan pòlan*
   house SUB façade worn.out / worn.out worn.out
   'The façade of the house looks run down.'
   (Yang-Drocourt 2008: 45)

There is also a difference on the suprasegmental level. The lexical tones (noted as T) are maintained in adjectival reduplication, hence [_Adj $A^T B^T$] > [_Adj $A^T A^T B^T B^T$], as e.g. in (13): *gāoxìng* > *gāogāoxìngxìng*.[5] By contrast, in the repetition of the verb the second syllable is in the neutral tone (signalled by the absence of a tone mark in the transliteration), hence [_V $A^T B^T$] > [_V $A^T B^0$] [_V $A^T B^0$], as illustrated in (12a): *zhǐdiǎn* > *zhǐdian zhǐdian*. It is the different tonal patterns that allow us to distinguish between adjectival reduplication [_Adj A^T] > [_Adj $A^T A^T$] (cf. [15a-b]) and repetition of the verb [_V A^T] > [A^T] [A^0] (cf. (14a-b)) in the case of monosyllabic words; once again the tone of the adjective is maintained, whereas the repeated verb is in the neutral tone:

(14) a. *Zhōumò zài jiā kàn kan shū , tīng ting yīnyuè, duō hǎo!*
   weekend at home look look book listen listen music so good
   'To read some books and to listen to music at home during the
   weekend, how wonderful this is!'

   b. *Nǐ cháng chang zhèi ge cài de wèidao*
   2SG test test this CL dish SUB taste
   'Have a taste of this dish.'
   (Yang-Drocourt 2008: 21, [28], [29])

(15) a. *Yǎnquān hónghóngde*
   eye.socket red

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4 For discussion of the *de*-ending in reduplicated adjectives, cf. section 5.3.2 below.
5 The tonal pattern for reduplication in the standard language, [_Adj $A^T B^T$] > [_Adj $A^T A^T B^T B^T$], should not be confused with the one observed for a subset of disyllabic adjectives in the Beijing dialect: [_Adj $A^T B^T$] > [_Adj $A^T A^T B^1 B^1$] where the second syllable in the reduplicated form bears the first tone, irrespective of its lexical tone: *gāoxìng* > *gāogāoxìngxīng* (cf. Hu Mingyang 1983). Note that the second A-syllable in this reduplication might be pronounced in the neutral tone: *gāoxìng* > *gāogaoxīngxīng*. Special thanks to Zhitang Yang-Drocourt for help with this point.

'The eyes are all red.'

b. *Yè   hēihēide*
   night black
   'At night it's all dark.'   (Yang-Drocourt 2008: 42, [45], [46])

The preceding examples illustrate that verbs – be they stative or activity verbs, transitive or intransitive – all show the same pattern and are repeated as a whole, resulting in two instances of the verb, in contrast to the reduplication of each syllable for adjectives giving rise to one adjective.[6]

The formal difference between adjectival reduplication and repetition of the verb is accompanied by an interpretational difference, confirming that two completely different processes are involved here. Whereas the repetition of the verb [$_{V°}$ AB] [$_{V°}$ AB] gives rise to the so-called "tentative aspect" (Chao 1968: 204) or "delimitative aspect" (Li and Thompson 1981: 232–236), reduplication of adjectives [$_{A°}$ AABB] is said to involve a higher degree of liveliness or intensity (cf. Chao 1968: 209; Tang Ting-chi 1988: 36; Zhu Dexi 1980 [1956]).[7] This shows clearly that adjectives and intransitive stative verbs (such as *huānxǐ* 'enjoy') cannot be conflated into a single class. (For a detailed discussion of the syntax and semantics of reduplicated adjectives, cf. section 5.3 below).

5.1.3 *De*-less modification

Besides the modification structure where the subordinator *de* intervenes between the adjective and the noun, 'A *de* N(P)', there also exists the possibility of

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6 In the literature the *repetition* of the verb and adjectival *reduplication* are in general both referred to as *reduplication (chóngdié* in Chinese), even by authors who discuss them in order to highlight the differences between verbs and adjectives. Since two completely different phenomena are involved, I prefer to use two different terms. Furthermore, the differences between the two are also systematically reflected in my Pinyin transliteration, another point often not paid attention to in the literature. A reduplicated adjective is written as one word, AABB, whereas the two repeated instances of the verb are written separately as two words, AB AB.
7 As emphasized in Yang-Drocourt (2008: 20), the general softening, quantity decreasing semantics associated with the repetition of the verb produces different effects, depending on the verb and the context. The repetition of the verb can e.g. convey (i) the short duration of a process or the small amount of iterations of a process, (ii) the lack of impact of a movement or a gesture, (iii) the softening of an order or request made, (iv) the (cautious) attempt of undertaking an action. These nuances are often difficult to render in English and are therefore not systematically reflected in the translations of the examples.

simply juxtaposing the adjective and the noun (which must be bare), 'A N', resulting in a noun *phrase*, not a compound (as to be demonstrated in section 5.2.3 below). The existence of the *de*-less modification structure is important, because in addition to the arguments provided above it once again highlights the fact that not all adnominal modifiers can be analysed as relative clauses, the latter always requiring *de*. Consequently, the acceptability of the *de*-less modification pattern again allows us to distinguish between adjectives and stative verbs, because only the former, but not the latter, can modifiy a noun without *de*. The (im)possibility of *de*-less modification thus serves as one of the diagnostics which establish two different classes of adjectives for Chinese (cf. section 5.3 below). A rich array of data is given below in order to illustrate the properties of the *de*-less modification structure and to correct misconceptions prevalent in the literature.

First, the *de*-less modification structure is acceptable for monosyllabic *and* disyllabic adjectives as well as for complex modifiers (cf. [19], [20]); this straightforwardly invalidates Sproat & Shih's claim (1988: 466, 474; 1991: 566) that the *de*-less modification structure is acceptable only for monosyllabic "light" adjectives:[8]

(16) *yī jiàn zāng/ piàoliang/ gānjìng yīfu*
   1 CL dirty/ pretty / clean dress
   'a dirty/pretty/clean dress'

(17) *yī ge qíguài xiànxiàng*
   1 CL strange phenomenon
   'a strange phenomenon'

(18) *pǔtōng shēnghuó*
   ordinary life
   'an ordinary life'

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8 Apparently, the idea that *de*-less modification is possible with monosyllabic adjectives only has been around for a long time, because it is explicitly corrected by e.g. Fan Jiyan (1958: 213) and Zhu (1980 [1956]: 3). Fan Jiyan (1958: 213) even goes as far as providing an exhaustive list giving all the possible combinations of monosyllabic and polysyllabic nouns with monosyllabic and polysyllabic adjectives in the *de*-less modification structure.

(19)   *yī bǎ [yìng sùliào] yǐzi*[9]   (Fu Jingqi 1987: 286, [55])
       1 CL hard plastic chair
       'a chair of hard plastic'

(20)   *yī ge [hēi   qī   ] yīguì*   (Fan 1958: 215)
       1 CL black lacquer wardrobe
       'a black-lacquered wardrobe'

Second, predicative adjectives as well as "non-predicative" intersective adjectives occur in both types of modification structures, the one with and the one without the subordinator *de*. If the relative clause analysis of all adnominal modifiers were correct, we would expect a completely different scenario: predicative adjectives would be predicted to exclusively occur in the modification structure with *de* (*de* being obligatory for relative clauses), whereas "non-predicative" adjectives would be predicted to be limited to the *de*-less modification structure and to be excluded from the modification structure with *de* (the latter being likened to a relative clause). Note finally that the unacceptability of non-intersective adjectives such as *yuánlái* 'original', *yǐqián* 'former' in the *de*-less modification structure and their acceptability in the modification structure with *de* (cf. [7] above, *yuánlái *(de) yìsi* 'the original meaning') is completely unexpected as well; given that non-intersective adjectives are excluded from any predicative function, be it on their own or with *shì...de*, they should not occur in the modification structure with *de* which allegedly always involves a relative clause as modifier.

Examples of "non-predicative" intersective adjectives with and without *de*:

(21)   *yī ge fāng (de) pánzi*   (cf. [4]) above)
       1 CL square SUB plate
       'a square plate'

(22)   *tiānrán (de) zhēnzhū*
       natural SUB pearl
       'natural pearls'

---

9 The complex modifier in (19) and (20) is itself a *de*-less modification structure 'A N', viz. *yìng sùliào* 'hard plastic' and *hēi qī* 'black lacquer', respectively.

(23)   *juémì   (de) wénjiàn*
         top-secret   SUB document
         'top-secret documents'

Examples of predicative adjectives with and without *de*:

(24)   *yī ge pàng/ lǎoshí / cōngmíng (de) rén*
         1 CL fat / honest/ intelligent   SUB person
         'a fat/honest/intelligent person'

(25)   *yángé (de) guīdìng*
         strict   SUB   rule
         'strict rules'

(26)   *yī jiàn zāng/ piàoliang/ gānjìng (de) yīfu*   (= [16] above)
         1 CL dirty/ pretty / clean   SUB   dress
         'a dirty/pretty/clean dress'

(27)   *yī tiào dà /hēi   (de) gǒu*
         1 CL big/black SUB   dog
         'a big/ black dog'

Third, acceptability in the *de*-less modification structure is another criterion for distinguishing between "predicative" adjectives on the one hand, and stative verbs, on the other. Since both classes are compatible with degree adverbs such as *hěn* 'very', they seem at first sight difficult to tell apart:

(28)   *Tā hěn cōngmíng/ hěn dānyōu*[10]
         3SG very intelligent/ very worry
         'He is intelligent / worries a lot.'

However, in contrast to adjectives, stative verbs - like verbs in general - are excluded from the *de*-less modification strucure and can only modify a head noun by virtue of being in a relative clause, which always requires *de* (cf. [29]):[11]

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10 As discussed in section 5.1.4 below, (unstressed) *hěn* 'very' plus adjective in fact indicates the positive degree, whereas with stative verbs *hěn* conveys a higher degree: 'worry a lot.'
11 This statement must be somewhat relativized insofar as VPs may be directly juxtaposed with a noun without the subordinator *de*: 'VP N°'. A first small survey shows that in the majority of cases, the noun plays the role of an adjunct with respect to the VP (cf. [i] – [iii]), that the

(29) [_DP_[_TP_ Ø_i dānyōu] *(de_sub) ren_i]
     worry SUB person
  'persons who worry'

The difference between verbs (in general) and adjectives is particularly clear in the case of predicative adjectives that have an inchoative verbal counterpart, identifiable by its compatibility with the perfective aspect suffix *-le*: While the adjective can simply be juxtaposed with the head noun (cf. [24], [26] above), the corresponding verb, identifiable as such by the presence of the perfective suffix *-le*, requires the presence of *de* ([30], [31]).

(30) *pàng* *-le* *(de) rén*
  become.fat-PERF SUB person
  'the person who has put on weight'

(31) *zāng* *-le* *(de) yīfu*
  become.dirty-PERF SUB dress
  'the dress which has become dirty'

Acceptability in the *de*-less modification structure is thus a good test to tell adjectives apart from verbs. The differences in semantic and syntactic constraints between the *de*-less modification structure and the modification structure with *de* require a detailed study, which is taken up in section 5.2 below. These differ-

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VP must be bare, to the exclusion of e.g. auxiliaries (cf. [iv]), and that acceptability judgements vary (marked by #): only (i) – (iii) were accepted by all speakers consulted.

(i) *[_VP_ xià yǔ] tiān*
  fall rain day
  'a rainy day'

(ii) *tíng chē dìdiǎn*
  stop car place
  'parking lot'

(iii) *bào míng rìqí*
  report name date
  'registration deadline'

(iv) <u>*kěyǐ*</u> *bào míng *(de) rìqí*
  can report name SUB date
  'the date until one can register'

(v) # *dānyōu rénmìng*
  worry life
  'a life of worries'

(vi) # *kāi huì shíjiān*
  hold meeting time
  'the time of the meeting'

The absence of *de* seems to induce a semantic effect similar to that observed in the simple juxtaposition 'adjective noun' (cf. section 5.2 below) where a new subcategory is created, such as 'rainy day' rather than 'a day when it was raining' for (i). Future research needs to determine whether these *de*-less structures are compounds or indeed phrases involving a reduced relative clause. For first attempts at collecting some of the relevant data, cf. Lü Shuxiang (2000 [1980]: 158), Liu Danqing (2005: 8), Shi Dingxu (2005).

ences are not only important for typological studies of adnominal modification, but also confirm the distinction between the categories adjective and verb.

5.1.4 "Bleached" hen (*hěn*) and fried chicken

Another difference between adjectives and stative verbs is an interpretational one: when an adjective in its bare form without any adverbial modifier functions as a predicate, it is understood as indicating the comparative degree, while this is not the case for a bare stative verb such as *xǐhuān* 'like':

(32)   *Tā cōngmíng/ piàoliang   / kāixīn/ lèi*
         3SG intelligent/ good-looking/ joyful/ tired
         'She is more intelligent/good-looking/joyful/tired.'
         (than someone mentioned in the preceding discourse or known to
          hearer and speaker)

(33)   *Tā xǐhuan shùxué*
         3SG like   mathematics
         'She likes mathematics.'
         (Not: 'She prefers mathematics to another implicitly understood
          subject matter.')

As to be expected, in the comparative construction with an explicit standard of comparison, the adjective is in the bare form as well:[12]

(34)   *Tā bǐ   Lǐsì cōngmíng / piàoliang   / kāixīn/lèi*
         3SG compared.to Lisi intelligent/ good-looking/ joyful/tired
         'She is more intelligent/ good-looking/joyful/tired than Lisi.'

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12 By contrast, for stative verbs in the comparative construction with *bǐ* 'compared to', a degree adverb is obligatory, while it is optional with adjectives which are fine in the bare form:
(i)   *Tā bǐ   Lǐsì *(gèng) tǎoyàn shùxué*
        3SG compared.to Lisi even   loathe mathematics
        'He loathes mathematics even more than Lisi.'
Another difference between adjectives and stative verbs is that only the former, but not the latter are allowed in the so-called *transitive comparative* (cf. Erlewine 2007, C.-S. Luther Liu 2007, Grano and Kennedy 2012):
(ii)   *Tā gāo Lǐsì sān gōngfēn*   'He is 3 cm taller than Lisi.'
        3SG tall Lisi 3   cm

If the positive degree is intended, the presence of a degree adverb such as *tèbié* 'particularly', *tài* 'too' etc. is obligatory (cf. [1] above). If, however, the speaker does not want to add the meanings associated with these adverbs, but simply wants to express the positive degree, the (unstressed) adverb *hěn* 'very' is used; this *hěn* does not make any semantic contribution (hence remains untranslated), and is therefore often referred to as "bleached" *hěn*:[13]

(35) *Tā hěn cōngmíng/ piàoliang / kāixīn/ lèi*
      3SG very intelligent/ good-looking/ joyful/tired
      'She is intelligent/good-looking/joyful/tired.'

By contrast, when *hěn* 'very' modifies a stative verb, its lexical meaning 'very' contributes to the meaning of the sentence and is thus on a par with other degree adverbs:[14]

(36) *Tā hěn / tài/ tèbié xǐhuan shùxué*
      3SG very / too/particularly like mathematics
      'She (particularly) likes mathematics (very much/too much).'

These facts are well-known (cf. Dragunov 1960 [1952], §165, §202; *Xiandài hanyu xuci lishi* 1982: 244; Lü Shuxiang 2000 [1980]: 267) and it is therefore extremely misleading to mark well-formed sentences with a bare adjectival predicate of the type illustrated in (32) as ungrammatical, a practice sometimes encountered in the literature (cf. among others Huang Shi-Zhe 2006, C.-S. Luther Liu 2010).

To my knowledge, among the linguists outside of China, Paris (1989) was the first to take up the observations made by the Chinese linguists concerning the comparative degree interpretation of bare adjectival predicates and the positive degree interpretation obtained when contrasted in conjoined sentences (also cf. Sybesma 1991a, 1999a: 27).

(37) *Zhèi běn shū guì*   (Paris 1989: 112, [53])
      this CL book expensive
      'This book is more expensive.'

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13 In order for *hěn* preceding an adjectival predicate to convey its lexical meaning 'very', it needs to be stressed (cf. *Xiàndài hànyǔ xǔcí lìshì*, p. 243).
14 This seems open to some varation; while for the speakers consulted by me adverbs modifying stative verbs contribute their full lexical meaning, the reviewer reports speakers requiring "bleached" *hěn* 'very' for stative verbs as well.

(38)   *Zhèi běn shū   guì ,   nèi   běn   piányi*
       this CL book expensive that CL   cheap
       'This book is expensive., that one is cheap.'
       (Paris 1989: 113, [54]; cf. *Xiandài hanyu xuci lishi* 1982: 244)

In fact, negation (cf. [39]) and questions (cf. [40a–b]) are additional syntactic contexts that give rise to a positive degree interpretation of a bare adjectival predicate, to the exclusion of the comparative degree interpretation:[15]

(39)   *Zhèi běn shū   bù guì*
       this CL   book NEG expensive
       'This book is not expensive.'

(40)   a.   *Zhèi běn shū   guì   ma?*
            this CL   book expensive PART
            'Is this book expensive?

       b.   *Zhèi běn shū   guì   bù guì?*
            this CL   book expensive NEG expensive
            'Is this book expensive?'

As illustrated by (40a) and (40b), this observation holds for both types of yes/no question, i.e. the so-called 'A-*bù*-A' question (cf. Huang C.-T. James 1982) where the affirmative predicate is followed by the same predicate in negated form, and the question built by adding the sentence-final particle *ma* to the sentence (cf. chapter 7 below).

   Importantly, these interpretational differences (comparative degree vs positive degree) in terms of the syntactic context (conditioning the presence of *hěn* 'very') are observed for (gradable) adjectives only, not for stative verbs, thus confirming the distinction between the two categories. In the wake of a renewed interest in adjectives over the last decade, several studies have tried to come to

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15 C.-S. Luther Liu (2010) also reports conditional sentences as context where the "bare" adjective is interpreted in the positive rather than the comparative degree (cf. ([i]). By contrast, this does not seem to be the case for sentential subjects and complement clauses (*pace* a suggestion made by the reviewer) where at least the speakers consulted by me required the presence of *hěn* for the positive degree reading.

(i)   *Zhāngsān yàoshi lìnsè dehuà, jiù   bù huì qǐng nǐ   chī fàn*
      Zhangsan if   stingy SFP   then NEG will invite 2SG eat meal
      'If Zhangsan is stingy, he will not treat you to dinner.'   (C.-S. Luther Liu (2010, [26d])

terms with the distribution and function of *hěn* 'very'; as a corollary, they have also addressed the challenge Chinese represents for the general claim that crosslinguistically the comparative rather than the positive degree is marked in languages.[16]

Huang Shi–Zhe (2006: 352) postulates that adjectives are of the same semantic type as bare nouns, i.e. argumental <e>, and that they require a "predication marker" in the form of the "type lifter" *hěn* 'very' when functioning as predicates.[17] Note, though, that this makes wrong predictions for bare nouns as predicates, because here the copula *shì* 'be' is required, not *hěn* 'very': *'S *hěn* N' vs 'S *shì* N' (cf. [41a]). Likewise, the parallel between adjectives and bare nouns leads us to expect the presence of the copula *shì* 'be' for adjectival predicates, again contrary to fact, because the copula is excluded for adjectives: *'S *shì* adj.' (cf. [41b]).[18] Nor can Huang Shi–Zhe's (2006) scenario account for the contrast between nouns and adjectives with respect to negation; while adjectives can be directly preceded by the negation *bù* (cf. [42a]), this is excluded for bare nouns, which again require the copula (cf. [42b]):

(41) a. *Tā { shì/*hěn} lǎoshī*
          3SG   be/ very   teacher
          'He is a teacher.'

      b. * *Tā shì cōngmíng*
          3SG   be   intelligent

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16 According to Paris (1989: 113), in Chinese the positive degree is derived from the comparative degree, the latter being the base form for adjectives.

17 More precisely, Huang Shi–Zhe (2006) makes this claim for "simple" adjectives only, given that "complex adjectives" such as reduplicated adjectives (cf. [13] above) are said to be of the type <e,t>, hence capable of functioning as predicate. Cf. section 5.3 below for discussion of that second class of adjectives.

18 The sequence 'S *shì* adjective' is only acceptable when *shì* is not the copula, but the so-called *emphatic shì*, which is always stressed and like English *do* strengthens the assertion:

(i)   *Tā <u>shì</u> cōngmíng*
        3SG SHI   intelligent
        'He <u>is</u> intelligent.'

(ii)   *Tā <u>shì</u> zǒu-le*   (Lü Shuxiang (2000 [1980]: 499)
        3SG SHI   leave-PERF
        'He <u>did</u> leave.'

Unlike the copula *shì* 'be', emphatic *shì* cannot be negated: *Tā bù <u>shì</u> cōngmíng*. It can therefore not be likened to the (negatable) copula *shì* used in focus clefts and assocation with focus structures (*contra* C.-S. Luther Liu 2010: 19; Grano 2012, section 4.3).

(42) a. *Tā bù cōngmíng*
      3SG NEG intelligent
      'He is not intelligent.'

  b. *Tā *(bù) shì lǎoshī*
      3SG NEG be teacher
      'He is not a teacher.'

Finally, Huang Shi–Zhe (2006) does not discuss at all the comparative degree interpretation observed for bare adjectival predicates (cf. [32]). Since in her proposal adjectives are considered to be argumental <e> and therefore incapable of functioning as predicates on their own, this phenomenon is as unexpected as the possibility of bare adjectival predicates indicating the positive degree in certain syntactic contexts (cf. [38] – [40]). (Also cf. Cheng and Sybesma 2009, C.–S. Luther Liu 2010, Grano 2012 for a critical appraisal of Huang Shi–Zhe 2006).

C.–S. Luther Liu (2010) considers *hěn* as the realization of the otherwise covert positive morpheme POS, which is analysed as a polarity item. When there is no predicate accessible operator[-wh] to license POS, *hěn* is required. This is the case in matrix declarative sentences, hence the obligatory character of *hěn*. By contrast, under negation and in interrogatives as well as in conditionals, bare adjectival predicates (with covert POS) are fine, because in all of these syntactic environments POS *qua* polarity item is licensed. As emphasized by C.–S. Luther Liu (2010), under this analysis, the adjectival structure of Chinese is simpler than that of English.

Grano (2012) adopts the opposite view and tries to reconcile the Chinese facts with the generalization that adjectives indicating the comparative degree in general have more, not less structure than those indicating the positive degree. Positive degree semantics is provided by a type shifting rule that does *not* project in syntax, but merely changes the semantic type of a degree relation to that of a property. By contrast, the covert comparative operator projects a DegreeP in syntax, in addition to providing the comparative degree semantics. Crucially, a DegP can function as predicate and can therefore be a complement of the T-head which exclusively selects a potentially predicative projection. In the case of positive degree bare adjectives *hěn* is obligatory, because here *hěn* projects a DegP which in turn is an acceptable complement for T. The negation *bù* in fact has the same effect as *hěn*, i.e. it interposes a predicative projection (analysed as the realization of Laka's (1990) Sigma Phrase) between the T node and the AP. This works nicely both for negation and A-*bù*-A questions as in (40b) above, where the morpheme with the feature [+Q] giving rise to the

A-*bù*-A question occupies the same SigmaP as negation. However, this account is more difficult to defend for the *yes/no* question with the sentence-final particle *ma*, *ma* qua complementiser (C) being above TP and therefore not able to intervene between T and the positive degree AP. (Cf. chapter 7 below for an analysis of sentence-final particles as C-heads.)

To summarize this short overview, C.–S. Luther Liu (2010) and Grano's (2012) analyses of *hěn* are clearly superior to Huang Shi–Zhe (2006) in that they are able to account for most of the relevant data. However, as far as I can judge, their acounts fall short of the second class of adjectives, i.e. *derived adjectives* (to be discussed in section 5.3 below). Besides being practically incompatible with degree adverbs (including *hěn* 'very'), derived adjectives exclusively receive a positive degree interpretation, including the case in which they function as predicates. This observation also highlights the importance of the second class of adjectives both for syntax and semantics, because any analysis proposed for simple adjectives must be double checked for its predictions concerning this second class.

5.2 *De*-less modification vs modification with *de*

In section 5.1.3 above the *de*-less modification structure 'A N', where adjective and head noun are simply juxtaposed without the subordinator *de*, was mentioned as one of the diagnostics allowing us to distinguish adjectives from verbs. I now turn to the interpretational differences associated with the absence or presence of *de*, which are the motivation to posit the existence of two modification structures in Chinese, *de*-less modification and modification with *de*. As will be demonstrated in the course of this section, the special semantics associated with *de*-less modification seems to have led linguists astray in their attempts to propose a syntactic analysis. In particular, the description provided by Sproat and Shi (1988, 1991), often cited as *the* source on adnominal modification in Chinese, is simply not correct (cf. Paul 2005a for detailed discussion).[19] Nonetheless, it was this incorrect presentation that was taken up by linguists interested in adnominal modification from a typological perspective and that shaped their views on Chinese. Subsequently, the way Chinese was integrated into the general typological picture of adnominal modification in turn served to confirm the preconceived ideas about adjectives in Chinese as verbs and of

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19 Their presentation of the facts in Persian (Arsalan Kahnemuyipour p.c.) and French is not correct, either.

adjectival modifiers as relative clauses, claims crucial to Sproat and Shi (1988, 1991) which had fed the crosslinguistic comparison in the first place.

Before discussing *de*-less modification, I would like to get some basic facts straight concerning modification with *de*, given that the latter serves as the backdrop for every analysis of *de*-less modification.[20]

At the very beginning of their (more or less identical) articles, Sproat and Shi (1988: 465; 1991: 565-566) provide examples such as (43) where each adjective is followed by *de*, i.e. 'A₁ *de* A₂ *de* N':

(43)   a.   *xiǎo   de   fāng   de   zhuōzi*
              small   SUB   square   SUB   table
              'small square table'

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20 Like all studies on the *de*-less modification structure 'A N', I limit myself here to the constraints governing the presence or absence of *de* when the adjective is to the right of the classifier. This precision in general remains implicit, the more so as the majority of examples provided in the literature are of the form 'A (*de*) N' without any classifier phrase. It is important to be emphasized, though, because it is well-known that the contraints governing the presence or absence of *de* are quite different for modifier XPs *preceding* the sequence 'demonstrative pronoun + classifier'. For example, relative clauses may occur without *de* here (cf. [i]), in contrast to the obligatory presence of *de* for a relative clause to the right of the classifier (cf. [ii]). The same holds for APs and possessor DPs which otherwise require *de* (cf. (iii)). To my knowledge, no account of this conditioned optionality of *de* has been proposed so far in the recent proposals for *de* (cf. among others Cheng and Sybesma 2009; Y.-H. Audrey Li 2007, 2012, to appear; Simpson 2001; C.-C. Jane Tang 2007; Niina Ning Zhang 2010); this also applies to my own work (cf. Paul 2012, to appear).

(i)   a.   *[DP[TP Øᵢ mǎi xiǎo   qìchē]   (de)   zhèxiē   rén]*
                buy   small   car   SUB   these   person
        'the persons who bought a small car'
   b.   *[DP zhèxiē [TP   Øᵢ mǎi xiǎo   qìchē] *(de) rén]*
              these   buy   small   car   SUB   person
        'the persons who bought a small car'
(ii)   a.   *zuì   gāo (de)   nà ge   xuéshēng*   b.   *nà ge   zuì   gāo *(de) xuéshēng*
          most tall   SUB   that Cl   student   that Cl   most   tall   SUB   student
        'the tallest student'   'the tallest student'
(iii) a.   *{Xiǎo Wáng/   tā}   (de)   nà ge   péngyou*
           Xiao Wang/   3SG   SUB   that Cl   friend
        'Xiao Wang's friend/ his friend'
   b.   *nà ge   {Xiǎo Wáng/ tā}   *(de) péngyou*
          that Cl   Xiao   Wang/   3SG   SUB   friend
        'this friend of Xiao Wang/ this friend of his'

     b. *fāng   de xiǎo   de zhuōzi*
       square SUB small SUB table
       'small square table'

Since, according to them, both orderings, (43a) and (43b), are fine, they note a clear contrast with English, where only the ordering 'size > form' indicated in the translation is possible (in contrast to **square small table*). Given that without *de*, the order is fixed and the same as in English (cf. (44a)), they then conclude that the *de*-less modification structure is the relevant one to choose if one wants to investigate adjective ordering restrictions.

(44)   a.   *xiǎo fāng   zhuōzi*
           small square table
           'small square table'

       b. **fāng   xiǎo zhuōzi*[21]
          square small table

It is correct to state that the order is fixed in (44). (For the semantics associated with the *de*-less modification structure, cf. section 5.2.1 immediately below.) By contrast, the structure 'A₁ *de* A₂ *de* N' (cf. [43a] and [43b], the very basis of their study, is at best marginal in Chinese (cf. Fu Jingqi 1987: 151; Lü Shuxiang (2000 [1980]: 159):

(45)   ?? *Cōngmíng de rèqíng de gūniang hěn nán   zhǎo*
         intelligent SUB kind   SUB girl   very difficult find
         ('Intelligent and kind girls are hard to find.')
         (cf. Fu Jingqi (1987: 151, [104]))

Crucially, this structure is *not* an instance of the so-called *comma intonation*, where the adjectives are separated by a pause indicating their equal ranking rather than a hierarchy, as e.g. *square, small table* where accordingly the otherwise valid order 'size > shape can be suspended. Quite the contrary, the Chinese equivalent of the comma intonation in English has the form 'A₁, A₂ *de* N' with a pause between the first and the second adjective and *without* the subordinator *de* after the first adjective:

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[21] *Yuánxíng [N° xiǎo-yè]* 'round small-leaves' given by the reviewer probably involves a compound noun and does not invalidate the syntactic order constraint 'size > form' for adjectives.

(46)   *Cōngmíng, rèqíng de gūniang hěn nán   zhǎo*
     intelligent   kind   SUB girl   very difficult find
     'Intelligent, kind girls are hard to find.'

Importantly, as discussed in great detail by Fu Jingqi (1987: 151–157), the well-formed variants for a DP with two adjectives involve only one *de*, the two adjectives being coordinated and forming a single Adjectival Phrase (AP).

(47)   a.   [AP *Jì   cōngmíng yòu rèqíng*] *de gūniang hěn nán   zhǎo*
           both intelligent and   kind   SUB girl   very difficult find
           'Intelligent as well as kind girls are hard to find.'[22]

     b.   [AP *Jì   rèqíng yòu cōngmíng*] *de gūniang hěn nán   zhǎo*
           both kind   and intelligent SUB girl   very difficult find
           'Kind as well as intelligent girls are hard to find.'

Given the coordination relation between the adjectives it is no surprise that they can be permuted, which produces the impression of free ordering with respect to the noun. However, this "freedom" only applies to the coordinated adjectives themselves within the AP. In other words, it is not clear at all whether the Chinese data warrant Sproat and Shi's (1988, 1991) statement that adjective ordering in the modification structure with *de* is free in Chinese, i.e. does not have any semantic consequences.

5.2.1 The special semantics associated with the *de*-less modification structure

The interpretational differences between the modification structure with and without *de* as well as the semantic and syntactic constraints on the *de*-less modification structure are a long–standing issue in Chinese linguistics, as witnessed by the lively debate among Chinese linguists in the 1950s and 1960s (see Paris 1980 for a collection containing the translations of the most influential articles from that period). As mentioned at the outset of this chapter, the linguists back then simply took the category adjective for granted, and on this

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22 As pointed out by Fu Jingqi (1987: 152), *jì…yòu* 'both … and' only coordinates adjectives. Accordingly, (47) exclusively refers to girls that simultaneously possess the two properties of being intelligent and kind.

basis undertook the task of trying to pin down the subtle differences hinging on the presence and absence of *de* in modification structures (cf.[48] and [49]):

(48) *cōngmíng (de_{sub}) háizi*
      intelligent SUB child
      'intelligent child(ren)'

(49) *fāng   (de_{sub}) pánzi*
      square SUB   plate
      'square plate(s)'

To make a rather complicated story short, with the *de*-less modification structure, a new subcategory is established, which must present a natural, plausible class in the sense of Bolinger (1967) (cf. section 5.2.2 below). The modifier serves to single out the relevant subset of objects denoted by the NP, i.e. the modifier is presented as a defining property of the *resulting* new subcategory: *cōngmíng háizi* 'intelligent children', *fāng pánzi* 'square plate'.

This explains why modifiers referring to an intrinsic property of the noun are excluded from the *de*-less modification structure: it is impossible to establish a new subcategory by using an intrinsic property of the category concerned, this intrinsic property holding for the hyperonym and for any of its subcategories alike:[23]

(50) **tián fēngmì*
      sweet honey
(51) **gāo mótiānlóu*
      high skyscraper

When it does not indicate an intrinsic property of the head noun, the same adjective can be perfectly acceptable in the *de*-less modification structure:

(52) *Wǒ zuì   xǐhuan tián   mántou*
      1SG most like   sweet steamed.bun
       'I prefer sweet buns.'

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23 While the native speakers consulted confirmed the unacceptability of (50) and (51), they also accepted the NP *lǜ yè* 'green leaves' proposed by the reviewer, with *lǜ* 'green' as an intrinsic property of *yè* 'leaves'. As suggested by Zhitang Yang-Drocourt, it is not excluded that colour adjectives behave differently from other adjectives in the *de*-less modification structure.

(53) *gāo   jiànzhùwù/ shuǐpíng*
      high building / standard
      'a high building/standard'

No such constraint holds for the modification structure with *de*, where adjectives are acceptable regardless of whether they denote an intrinsic property of the noun or not:

(54) *tài tián   de_sub   fēngmì/ mántou*
      too sweet SUB   honey/ steamed.bun
      'too sweet honey/buns'

(55) *zuì   gāo de_sub   mótiānlóu / jiànzhùwù*
      most   high SUB   skyscraper/ building
      'the highest skyscraper/building'

The interpretational properties of the *de*-less modification structure in Chinese thus differ from the semantics associated with prenominal adjectives in Romance languages "where the property of the adjective is asserted to be part of the defining features of the object in question. [...] For instance, in *tes lisses cheveux* ['your sleek hair'; WP], the hair is not merely described as sleek, it is defined as sleek, as if it could not be otherwise." (Bouchard 1998: 145). Accordingly, adjectives referring to an inherent property typically occur in the prenominal position: French *la blanche neige* 'the white snow' vs *la voiture blanche* 'the white car ; Italian *dolce miele* 'sweet honey' vs *vino dolce* 'sweet wine' (cf. Klein-Andreu 1983).

The interpretation of the sequence 'adjective noun' in Chinese is more than a simple intersective one. For example, *hēi tóujīn* 'black scarf' in (57) is not meant to describe a scarf which happens to be black, but rather presents *hēi* 'black' as the defining property of the resulting subcategory of scarves. In *hēi de tóujīn*, however, the interpretation is purely intersective and *hēi* 'black' + *de* optionally suggests a contrast with other modifiers, as for example *lán* 'blue' in *lán de tóujīn* 'a blue scarf'. This difference is admittedly a very subtle one and accordingly, most contexts allow both types of modification structures (cf. [56]). But as Fu Jingqi (1987) has shown, there also exist a few diagnostic contexts where only the *de*-less modification structure is allowed, as for example the identification context in (57a):

(56) *Tā bǎ hēi (de_sub) tóujīn sòng rén   le*   (Fu Jingqi 1987: 302)
      3SG BA black SUB   scarf give people SFP

'He gave (as a present) black scarves to people.'

(57) a. *Zhè shì hēi (*de_{sub}) tóujīn* (Fu Jingqi 1987: 302)
      this be blackSUB scarf
      'This is a black scarf.'

  b. *Zhè shì hēi de_{sub} tóujīn, bù shì lán de*
      this be black SUB scarf NEG be blue SUB
      'This is a black scarf, not a blue one.'

It is correct that in the identification context (57a) there is a preference for the new subcategory reading and hence the *de*-less modification structure. However, this context is not incompatible with an interpretation where the adjective is interpreted as contrastive, either, and where *de* is therefore present, as illustrated in (57b) (with a second conjunct added to Fu Jingqi's original example [57a]). In other words, even though certain contexts such as Fu Jingqi's (1987) diagnostic contexts strongly favour the *de*-less modification structure, the corresponding structure with *de* is practically always acceptable as well, *modulo* the associated meaning difference. Accordingly, only those speakers for whom the special semantics of the *de*-less modification is clear-cut enough will exclude the modification with *de* in the diagnostic contexts, while other speakers will accept both modification structures, with and without *de*, because "abstracting away" from the associated interpretational difference. This is the source for the judgement differences observed among speakers with respect to examples of the type (57a) above and (58), (60a), (61a) below.

Tang Ting-chi (1979) and Zhu Dexi (1984) also discuss the dichotomy between *de*-less modification and modification with *de* and provide the examples (58) and (59) below (where the presence of *de* in e.g. [59] implies the contrast with a stupid person, who would be expected to act in a muddle-headed way):

(58) *Nǐ shì ge cōngmíng rén , wǒ bù bī duō jiěshì*
      2SG be CL intelligent person 1SG NEG must much explain
      'You are somebody intelligent, I don't need to explain a lot.'
                                                        (Tang 1979: 147)

(59) *Yī ge cōngmíng de_{sub} rén bù huì zuò*
      1 CL intelligent SUB person NEG will do
      zhèyàng hútu de_{sub} shìqíng
      such muddle-headed SUB matter
      'An intelligent person would not do such a muddle-headed thing.'

(60) a. *Xuéxiào yǒu yángé guīdìng*   Zhu (1984: 11, (15, 16))
      school   have strict rule
      'The school has strict regulations.'

    b. *Xuéxiào yǒu jǐ   xiàng yángé de_{sub} guīdìng*
      school have several CL   strict SUB   rule
      'The school has several strict regulations.'

In the modification structure with *de*, a property is encoded as an accessory one, in the sense that this property is presented as not instrumental in establishing a new subcategory of N. It is important to note that this is not to imply that a property *presented* as accessory cannot be stable through time (in e.g. (56), *hēi-de tóujīn*, the scarf does not change its black colour and in (60b) the regulations remain strict). This point is especially clear in the case of modifiers referring to material, which in Chinese are nouns and which – like adjectives – may appear in the *de*-less modification structure:

(61) *Tā yīgerén yī tiān kěyǐ zuò sān zhāng mùtóu (*de_{sub}) zhuōzi*[24]
    3SG alone 1 day can make 3   CL   wood SUB   table
    'He can on his own make three wooden tables a day.'   (Fu 1987: 292)

(62) *Tā bǎ mùtóu (de_{sub}) zhuōzi sòng rén   le*
    3SG BA wood SUB   table give people SFP
    'He gave wooden tables to people.'   (Fu 1987: 302)

It would not make sense to say that to be made of wood is a transient property of a table. To state that in the modification structure with *de*, a property is *encoded* as an accessory one is just meant to capture the fact that this property is not chosen by the speaker as one singling out a subcategory. Accordingly, individual-level as well as stage-level predicates are acceptable in both modification structures, with and without *de* (cf. [63] – [66] below); it is the absence or presence of *de* which determines the interpretation of a given property as an accessory or rather a defining one. Note that the *de*-less modification structure can

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24 Speakers replicating Fu Jingqi's (1987) judgements only accept *de* in (61) if a contrasting NP is added. (Special thanks to Zhitang Yang-Drocourt for discussion of this point.)
(i)   *Tā [...] kěyǐ zuò sān zhāng mùtóu de_{sub} zhuōzi hé yī zhāng tiě de_{sub} zhuōzi*
      3SG   can mak 3   CL   wood SUB table   and 1 CL   iron SUB   table
      'He can on his own make three wooden tables and one iron table a day.'

both refer to tokens of the new subcategory (cf. [61] – [64]) and to the new sub-category as kind (cf. (65) – [66]):

(63)   *yī jiàn zāng/ piàoliang/ gānjìng yīfu*
       1 CL   dirty/ pretty / clean   dress
       'a dirty/pretty/clean dress'

(64)   *yī ge qíguài xiànxiàng*
       1 CL strange phenomenon
       'a strange phenomenon'

(65)   *juémì   wénjiàn*
       top-secret document
       'top-secret documents'

(66)   *yángé guīdìng*
       strict rule
       'strict rules'

To summarize, unlike verbs (of any class), adjectives and nouns can function as modifiers in the *de*-less modification structure. Recall that adjectives are different from nouns in that they do not appear in the copulative structure.

5.2.2 Constraints governing the *de*-less modification structure

The preceding discussion is not meant to imply that any property can always be presented as a defining characteristic via *de*-less modification. For as observed by Zhu Dexi (1980 [1956]) and many others after him, the choice of the head noun likewise plays a role in determining whether both *de*-less modification and modification with *de* are acceptable. (The examples below are taken from Zhu 1980 [1956]: 9-10.)

(67)   a. *cōngmíng háizi*   b. **cōngmíng dòngwù*
           intelligent child   intelligent animal
           'an intelligent child

       c. *fēicháng cōngmíng de_{SUB} dòngwù*
           extremely intelligent SUB   animal
           'extremely intelligent animals'

(68) a. *zāng yīfu*
      dirty clothing
      'dirty clothing'

b. *zāng táng
      dirty candy

c. *nàme zāng de táng*
      so   dirty SUB candy
      'such dirty candy'

(69) a. *bái   tóufa*
      white hair
      'white hair'

b. *bái   shǒu
      white hand

c. *xuě -bái   de*_{SUB} *shǒu*
      snow-white SUB   hand
      'snow-white hands'

(70) a. *guì   dōngxī*
      expensive thing
      'expensive things'

b. *guì   shǒujuànr
      expensive handkerchief

c. *tíng   guì   de*_{SUB} *shǒujuànr*
      extremely expensive SUB   handkerchief
      'extremely expensive handkerchiefs'

But for most dimensions ranging from e.g. material, colour, shape to size etc. there exists a choice as to whether they can be encoded as defining or rather accessory properties. Note, though, that this only holds for intersective adjectives, in contrast to non-intersective adjectives, which always require *de*.[25] Recall that the *de*-less modification structure gives rise to the interpretation of the 'A/N N' sequence as (a designation for) a newly created subcategory, in other

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25 The obligatory presence of *de* with *non*-intersective adjectives (cf. [i] – [iii]) lends further support to the statement in section 5.2.1 above that the interpretation of *de*-less modification structures involves a special "enriched" *intersective* reading.

(i) *běnlai* *(*de*_{SUB}) *yìsi*
     original SUB   meaning
     'the original meaning'

(ii) *mùqián* *(*de*_{SUB}) *qíngkuàng*
     present SUB   situation
     'the present situation'

(iii) {*yǐqián / jiānglái*} *(*de*_{SUB}) *xiàozhǎng*
     former/ future   SUB   school.president
     'the former/future school president'

words, the 'A/N N' sequence has to result in a natural, plausible classification. In my opinion, it is this constraint which explains why *de*-less modification is not always possible.

This state of affairs is reminiscent of the restrictions governing the distribution in prenominal vs postnominal position for adjectives in English investigated by Bolinger (1967). Provided that both positions are potentially available for a given adjective, the adjective is interpreted as a characteristic property in the prenominal position, and as an occasional, temporary property in the postnominal position:

(71) a. *the only navigable river*
      b. *the only river navigable*

(72) a. *Who were the guilty people?*
      b. *Who were the people guilty?*   (Bolinger 1967: 4)

As Bolinger (1967: 4) states "[…] *the only river navigable* is unambiguously occasion, *the only navigable river* unambiguously characteristic. Similarly with *Who were the guilty people?*, which characterizes and classifies, vs *Who were the people guilty?*, which relates the guilt to an occasion."

Bolinger (1967) also comments extensively on the fact that the acceptability of an adjectival phrase in the prenominal position is difficult to predict, because it largely depends on *pragmatic* factors i.e., on whether the resulting NP is conceived of as a (culturally) relevant characterization. Discussing the reason why unlike *ill-behaved child* and *home-loving man*, **mistake-erasing secretary* and *husband-waking wife* are unacceptable, he says: "These must wait the day when we have some interest in characterizing secretaries as mistake-erasing and wives as husband-waking." (Bolinger 1967: 7). Accordingly, there exist numerous "irregularities": e.g. *your absent friend* is acceptable, while *your present friend* is not; the same holds for *deposited money* vs *withdrawn money* (Bolinger 1967: 9, 11). Conversely, it is not excluded that a former exclusively temporary modifier becomes acceptable in the prenominal position, "if the situation is such that nouns are distinguished by it" (Bolinger 1967: 11): *the then president* vs *the now president*, or *a nearby building* vs *a nearby bus*.[26]

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26 As pointed out to me by Madelyn Kissock and Jacqueline Guéron, Bolinger's (1967) examples call for some comments. (72b) is only acceptable with a complement added to guilty: *Who were the people guilty of treason ?*, which indicates that syntactic factors such as the presence/absence of a complement might also play a role in determining the (prenominal vs postnominal) position of adjectives. The NPs (still) noted as unacceptable by Bolinger (1967), *viz.*

The same unpredictability as to what counts as a natural, plausible classification stated for English by Bolinger equally holds for Chinese and explains the "gaps" observed for *de*-less modification: *bái tóufa* 'white hair', but not **bái shǒu* 'white hand', *cōngmíng rén/háizi* 'intelligent person/child,' but not **cōngmíng dòngwù* 'intelligent animal', *pàng rén* 'fat person', but not **shòu rén* 'skinny person', etc. As a matter of fact, it is this unpredictability which is at the origin of the not always homogeneous acceptability judgements for *de*-less modification structures. The following observation made by Monique Hoa (p.c.) sheds some light on the role that context may play here as a means of establishing a new subcategory whose relevance might not be immediately accessible to other speakers (thereby confirming Bolinger's [1967] view). Commenting on the unacceptability of (67b) above, **cōngmíng dòngwù* 'intelligent animals', she notes that this sequence might become acceptable after the difference between intelligent animals (*cōngmíng de dòngwù*) and non-intelligent animals (*bù cōngmíng de dòngwù*) has been introduced in the preceding discourse; to continue with *cōngmíng dòngwù* 'intelligent animals' as a new subcategory relevant in the given situation then becomes possible.

To summarize, the acceptability of a given *de*-less modification structure itself is determined by extra-linguistic considerations of what counts as a "natural", "plausible" class; in this respect Chinese behaves on a par with English where the same pragmatic factors are relevant for the interpretation of adjectives as a characteristic property and hence their acceptability in prenominal position. By contrast, the very existence of two modification structures, with and without *de*, is an integral part of Chinese grammar. This is confirmed by the fact that *de*-less modification in Chinese is confined to intersective adjectives, whereas this constraint is not observed in English (cf. *the then/now president*).

5.2.3 The phrasal status of the *de*-less modification structure

The requirement to obtain a (pragmatically) natural, plausible classification and the resulting impossibility of predicting the acceptability for a given *de*-less modification structure, as well as the special semantics associated with the *de*-less modification structures have often been misinterpreted as arguments for

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withdrawn money, *the now president* and *nearby bus*, are perfectly fine nowadays. To my mind, this nicely confirms Bolinger's (1967) observation that an exclusively temporary modifier might acquire the status of a characteristic property and hence be acceptable in prenominal position as soon as the resulting NP is considered a culturally relevant characterization (cf. Bolinger (1976: 11, footnote 8a).

compound status i.e, for 'A N' being a word, N°, rather than a noun phrase (cf. among others Sproat and Shih 1988, 1991; Duanmu San 1998; Aoun & Li 2003: 149). It is true that Chinese displays a large number of 'A-N' and N-N' compounds such as [N° *xiǎo-fèi*] 'small-cost' = 'tip', [N° *dà-yī*] 'big-coat' = 'overcoat', [N° *hóng-huā*] 'red-flower' = 'safflower' (plant used in traditional Chinese medicine), [N° *chá-huā*] 'tea-flower' = 'camelia', [N° *lóng-tóu*] 'dragon-head' = 'tap', [N° *huǒ-chē*] 'fire-vehicle' = 'train' etc. However, there are several tests to show that *de*-less modification structures possess clearly different properties from compounds and must be analysed as phrases.

First, it is well-known that the internal structure of compounds, i.e. of words, is inaccessible to syntactic rules (*Lexical Integrity Hyptesis* [LIH]).[27] This is illustrated in (74) – (77) where the head noun inside the [A–N] compound (e.g. *chá* 'tea' in *lù-chá* 'green tea' in [74]) is not visible for the rule operating on the phrasal level looking for an NP serving as antecedent for the empty category in the second DP. (73) shows the application of this rule to DPs with *de* (whose phrasal status is beyond doubt):

(73)   [*DP Wǒ de xínglǐ*] *zài   shàngbian,*[*DP nǐ de*sub *Ø] zài   xiàbian*
         1SG SUB luggage be.at top   2SG SUB   be.at bottom
         'My luggage is on top, yours is below.'

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27 As shown by C.-T. James Huang (1984a: 61.), Chinese (cf. [i], [ii]) – unlike German (cf. [iii]) – does not allow subparts of a word to be conjoined:

(i)   [N° *huǒ-chē   ] gēn* [N° *qì -chē*]   (= Huang 1984a: 60; [13a-b])
            fire-vehicle and   gas-vehicle
        'train(s) and car(s)'

(ii)   * [N° *huǒ gēn qì] chē*   (iii)   *Filz- und Stroh-hüte*
            fire and gas vehicle   felt and straw-hats
                                                        'felt hats and straw hats'

Huang (1984a: 61) also illustrates the fact that subparts of a word are not visible to interpretation rules. As in English *blackboard*, *hēi* 'black' in Chinese [N° *hēi-bǎn*] 'blackboard' is inaccessible and accordingly, (iv) is *not* rejected as contradictory, neither in Chinese nor in English:

(iv)   *yī kuài lǜsè   de   [N° hēi -bǎn]*
         1   CL   green SUB   black-board
        'a green blackboard'

Lu Zhiwei (1975: 32) makes the same observation; he states that the acceptability of *dà* 'big' as modifier in (v) forces us to conclude that *xiǎo-hái* 'small-child' = 'child' is a word, N°.

(v)   *dà   [N° xiǎo -hái]*
         big   small-child
        'a big child'

(74) a. *Wǒ xǐhuān[ₙ° lǜ   -chá], [ₙ° hóng-chá] yě   kěyǐ*
          1SG like   green-tea   red -tea   also possible
          'I like green tea, but black tea is also ok.'

      b. ** Wǒ xǐhuān[ₙ° lǜ   -chá], [DP hóng de_sub Ø] yě   kěyǐ*
          1SG like   green-tea   red SUB   also possible

      c. ** Wǒ xǐhuān[ₙ° lǜ   -chá], [DP hóng de_sub [ₙ° lǜ   -chá]] yě   kěyǐ*
          1SG like   green-tea   red SUB   green-tea   also possible
          ('I like green tea, but red green tea is also ok.')

(74b) is unacceptable because the only possible antecedent for the empty cate-
gory in the second DP is the (compound) noun *lǜ-chá* 'green tea'. This leads to a
nonsensical sentence (cf. [74c]), the more so as the adjective *hóng* 'red' – despite
what is implied by the parallel structure – lacks a contrasting counterpart in the
first conjunct, given that *lǜ* 'green' is invisible inside the compound. The same
reasoning applies to the unacceptable sentences (75b), (76b) and (77) below.

(75) a. *Wǒ xǐhuān chī [ₙ° xiǎo -báicài],*
          1SG like   eat   small-Chinese.cabbage
          yě   xǐhuān chī [ₙ° dà -báicài]
          also like   eat   big-Chinese.cabbage
          'I like to eat pakchoi [i.e. a variety of Chinese cabbage], and I also
          like to eat Chinese cabbage.'

      b. ** Wǒ xǐhuān chī [ₙ° xiǎo -báicài],*
          1SG like   eat   small-Chinese.cabbage
          yě   xǐhuān chī [DP dà de_sub Ø]
          also like   eat   big SUB

(76) a. *Wǒ yǐjīng mǎi-le   [ₙ° xiǎo-cōng], hái yào mǎi [ₙ° dà-cōng]*
          1SG already buy-PERF   small-onion still want buy   big-onion
          'I already bought shallots, I still want to buy Chinese onions.'

      b. ** Wǒ yǐjīng mǎi-le   [ₙ° xiǎo-cōng], hái yào mǎi [DP dà de]*
          1SG already buy-PERF   small-onion still want buy   big SUB

(77) ** Amēi bù xiǎng chī [ₙ° hóng-huā], [DP huáng de_sub Ø] hái   kěyǐ*
       Amei NEG want eat   red -flower yellow SUB   still acceptable
       ('Amei doesn't want to take safflower-medicine, yellow ones are ok.')

Importantly, the LIH holds regardless of whether the meaning of the compound is (relatively) compositional (cf. [74]) or completely opaque (cf. [77]); it is therefore not feasible to reduce the effects of the LIH observed above to the semantic opacity of the compounds at hand.

In *de*-less modification structures *qua* noun phrases, however, the head noun is visible to phrase-level rules and accordingly, an identity relation can be construed with the noun in a subsequent DP, thus licensing an empty noun in the latter.[28]

(78) *Wǒ juéde* [$_{NP}$ *huáng chènshān*] *bǐ*　　　　[$_{DP}$ *hóng de$_{sub}$ Ø*] *hǎokàn*
　　　1SG think　　yellow shirt　　　compared:to　red SUB　　pretty
　　　'I think that yellow shirts are prettier than red ones.'

(79) *Wǒ bù xǐhuān* [$_{NP}$ *yuán pánzi*],[$_{DP}$ *fāng　de$_{sub}$ Ø*] *hái　kěyǐ*
　　　1SG NEG like　　　round plate　　square SUB　　still　acceptable
　　　'I don't like round plates, square ones are still ok.'

(80) *Bù mǎi* [$_{NP}$ *dà pángxiè*], *mǎi* [$_{DP}$ *xiǎo　de$_{sub}$ Ø*]
　　　NEG buy　big crab　　　buy　　small SUB
　　　'Don't buy a big crab, buy a small one.'

Note that *de* is obligatory in a modified DP with an empty noun (also cf. Y.–H. Audrey Li 2007). This makes sense in an analysis where *de* as head selects this NP as its complement, and where the modifier XP occupies the specifier position of the projection headed by *de*, i.e. DeP: [$_{DeP}$ XP [*de* NP]] (cf. Paul to appear for further discussion).[29] In other words, the sequence 'XP *de* Ø' is not a case of

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28 Unlike the DPs with *de*, the *de*-less phrasal modification structures in (78) – (80) are labeled NP in order to indicate the absence of any covert position for *de* here. (For arguments and the comparison with nominal projections that do involve a covert *de*, cf. Paul to appear.) This is not meant to exclude the possibility of a definite interpretation for *de*-less modification structures depending on the context; in fact, in this respect, *de*-less modification structures behave on a par with bare nouns (cf. Lisa L.-S. Cheng and Sybesma 1999 for further discussion). Thanks to Jacqueline Guéron for attracting my attention to this point.

29 More precisely, in Paul (to appear) it is the EPP feature of *de* that forces the specifier position of DeP to be always filled. There is no movement of the modifier XP to Spec,DeP (XP being merged in Spec,DeP) and DeP is a head-initial projection (*contra* Simpson 2001, among others). The co-occurrence of several *de*'s within the same nominal projection is accounted for by analysing them as realizations of different heads on the D-spine with a partially non-identical feature make-up. For alternative analyses of *de*, cf. the critical overview in Paul (2012) and references therein as well as the articles in Tang Sze-Wing (to appear).

a headless NP as often assumed, but instantiates a DeP with a covert NP complement.

Examples (78) – (80) are thus on a par with (81): there is no *de* in the first NP, the subordinator *de* being optional in the case of pronouns as modifiers of kinship terms (cf. [82] vs [83]); in the second nominal projection of (81), by contrast, *de* is obligatory, due to the presence of a covert NP complement.

(81) *Tā gēgē   bǐ   [_DP wǒ *(de) Ø] gāo*
      3SG younger.brother compared.to   1SG SUB   tall
      'His younger brother is taller than mine.'

(82) *Tā/ wǒ (de) gēgē*
      3SG/ 1SG SUB   younger.brother
      'his/my younger brother'

(83) *Zhāngsān *(de) gēgē*
      Zhangsan SUB   younger.brother
      'Zhangsan's younger brother'

The (un-)accessibility of the noun for the covert NP in the second conjunct allows us to distinguish between the 'A N' sequences in (74) – (77), on the one hand, and those in (78) – (80), on the other: *lǜ-chá* 'green tea', *xiǎo-báicài* 'pak-choi', *hóng-huā* 'safflower' illustrate compounds, whereas *huáng chènshān* 'yellow shirt(s)', *yuán pánzi* 'round plate(s)', *dà pángxiè* 'big crab(s)' are phrases.

Another difference between 'A-N' compounds and 'A N' phrases is provided by the fact that 'A-N' compounds are not subject to the constraint observed for *de*-less modification structures, viz. to result in a natural, plausible classification. Thus, compounds with three modifiers are well attested and do not result in divergent judgements (cf. [84] – [86]), due to the obligatorily fixed order of the subparts within a compound. (Hyphens are used between the subparts in order to signal the difference with respect to modifiers on the phrasal level.)

(84) *[_N° yōu   -liáng-zhōng -chéngjī]*   (Xu and Liu 1999: 99)
          excellent-good-average-result
          'excellent, good and average results'

(85) *[_N° dà-zhōng -xiǎo -xué]*
          big-middle-small -school
          'educational institutions'
          (i.e., primary school, middle school and university)

(86)   [*N°* *guān-yà*   *-jì*   *-jūn*]
            best -second-third-rank
        'the first, second and third rank'

By contrast, *de*-less modification structures with more than two modifiers are very rare and not uniformly judged acceptable. While according to Xu and Liu (1999), (87) is well-formed, several native speakers rejected (87) as soon as the third modifier *hēi* 'black' was added. This is due to the fact that a natural, plausible classification is more difficult to obtain the more modifiers are present:

(87)   [*NP* *xiǎo*   *shòu*   (??*hēi*   ) *gēbo*]
            small   skinny   black   arm
        'a small skinny black arm'

Also note that in contrast to the adjectives in the [*N°* A–A–A–N] compounds, the modifiers in the *de*-less modification structure are interpreted as stacked. In other words, a *de*-less structure 'A N' is in turn modified by another adjective, giving rise to [*NP* A [*NP* A N]], which in principle might be modified by another adjective, resulting in the *de*-less modification structure [*NP* A [*NP* A [*NP* A N]]].

    Finally, adjective ordering restrictions (cf. Sproat & Shih 1988, 1991) may also serve as a diagnostic to distinguish between 'A-N' compounds such as [*N°* *dà-guàr*] 'unlined long gown' (cf. [89]), on the one hand, and the phrasal *de*-less 'A N' modification structures such as [*NP* *dà pánzi*] 'big plate' (cf. [88]), on the other. Feng Shengli (2001) observes that when a modifier such as e.g. *bai* 'white' is added, different ordering patterns obtain for the compound and the NP:

(88)   a.   [*NP* *dà* *bái*   *pánzi*]
                big white plate
            'a big white plate'

        b. *[*NP* *bái*   *dà* *pánzi*]
                white big plate

(89)   a.   [*NP* *bái*   [*N°* *dà-* *guàr*]]
                white   big-gown
            'a white unlined long gown'

        b. * *dà-* *bái*   *guàr*
                big white gown

Given that the ordering restrictions for modifiers apply in syntax, i.e. word-externally, and that a modifier relating to colour must be nearer to the head noun than a modifier relating to size, Feng Shengli (2001) concludes that *dà-guàr* 'unlined long gown' is a compound. Its internal structure is invisible to the ordering restrictions, hence the acceptability of (89a); (89b), on the other hand, is ungrammatical due to a violation of the *Lexical Integrity Hypothesis*. The NP *dà bái pánzi* 'big white plate' in (88a), however, obeys the ordering restrictions 'size > colour' applying in syntax and therefore must be distinguished from compounds like *dà-guàr*. His observation thus confirms the contrast established between 'A-N' compounds, on the one hand, and phrasal *de*-less 'A N' modification structures, on the other.

5.2.4 Interim summary

In the preceding sections, I have argued that the *de*-less modification structure is a phrase, not a compound (*contra* Sproat and Shih 1988, 1991; Duanmu San 1998; Aoun and Li 2003: 149, among others). This result is important insofar as it leads to the conclusion that both types of modification, with and without *de*, have to be taken into account for typological studies of adjectival modification, *contra* Sproat and Shih's (1988, 1991) claim that only the *de*-less modification structures are relevant.[30]

The constraint governing the acceptability of a *de*-less modification structure and giving rise to unpredictable "gaps" – an issue that has preoccupied Chinese linguists since the 1950's – has turned out to be of a semantico-pragmatic nature similar to the constraint observed for English by Bolinger: a *de*-less modification structure must result in a natural, (culturally) plausible classification. Since the *de*-less modification structure establishes a new subcategory (with the modifier presented as its defining property), it is evident that intrinsic properties are excluded here, because they hold both for the hyperonym and any of its subcategories. In this respect, Chinese *de*-less modification structures clearly differ from structures with prenominal modifiers in Romance

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30 As discussed in detail in Paul (2005a), Sproat and Shih (1988: 474, 477) apparently do not see any contradiction between assigning compound i.e., word status to *de*-less modification structures and their claim that ordering restrictions only apply to *de*-less modification structures. If Sproat and Shih were right and the *de*-less 'A (A) N' sequences were really words, i.e. N°, the impossibility of inverting the order of the adjectives would simply be due to the fact that word-internal structure is inaccessible to phrase level rules, and accordingly would not reveal anything about the (non-) existence of ordering restrictions in Chinese.

languages. Also note that non-intersective adjectives are excluded from *de*-less modification, again unlike prenominal modification in Romance languages and English.

Finally, the fact that "predicative" adjectives as well as "non-predicative" adjectives can appear in both types of modification structures challenges the family of proposals that derive all modifiers from underlying predicates. If this approach were correct, we would expect "predicative" adjectives to exclusively occur in the modification structure with *de* (*de* being obligatory for relative clauses), whereas "non-predicative" adjectives would either be predicted not to function as modifiers at all or exclusively with *shì…de*, a prediction not borne out by the data.

5.3 Morphology that meets the eye: Evidence for two classes of adjectives in Chinese

Establishing adjectives as a separate catgory in Chinese allows us to take a fresh look at reduplicated adjectives (e.g. *gāogāoxìngxìng* 'cheerful') and to acknowledge them as members of a second class of adjectives distinct from simple adjectives (e.g. *gāoxìng* 'cheerful'). While adjectival reduplication has been described in great detail in the literature in Chinese, these descriptions have mainly concentrated on simply listing the properties of simple vs reduplicated adjectives.[31] Accordingly, linguists have not seen that the semantic and syntactic differences observed in fact provide solid arguments in favour of adjectival reduplication as a genuine morphological process resulting in a *new* class of derivatives. Instead, Zhu Dexi (1980 [1956]: 6) in his important article on adjectives explicitly subsumes under one and the same grammatical category the so-called "base forms", instantiated by simple adjectives such as *gāoxìng* 'cheerful', and the so-called "complex forms", instantiated by e.g. reduplicated adjectives such as *gāogāoxìngxìng* 'cheerful'.

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31 There is not much literature on adjectival reduplication in Mandarin Chinese accessible to non-sinologists: Chao (1968: 205–10), Hu Mingyang (1983), Karl (1993), Tang Ting-chi (1997), and more recently Yang-Drocourt (2008, 2013) as well as C.-S. Luther Liu (2013). Li and Thompson's (1981: 32–34) section on reduplicated adjectives cannot be recommended, because it is for a large part factually incorrect. In addition, although Li and Thompson (1981: 28) talk about reduplication as a "morphological process", they incorrectly include the syntactic repetition of the verb here (cf. section 5.1.2 above). The ensuing discussion of reduplication has greatly benefited from extensive discussions with Zhitang Yang-Drocourt.

Furthermore, none of the typologically oriented studies (cf. among others Tang Sze-Wing 1998, Jimmy Lin 2004, Scott 2002b) ever takes reduplicated adjectives into account, which does not prevent Tang Sze-Wing (1998) and Jimmy Lin (2004) to make the far-reaching – and wrong – claim that adjectives and stative verbs are to be conflated into one class in Chinese. Finally, the monograph by Packard (2000) on morphology in Chinese mentions reduplication of adjectives only in passing (p. 249).

As will be argued in the remainder of this section, adjectives are not only a separate part of speech from (stative) verbs, but within the category of adjectives, simple adjectives and reduplicated adjectives belong to two distinct morphological classes, each of which is associated with a predictable set of semantic and syntactic properties.

5.3.1 Reduplication as a morphological process

As is to be expected from a morphological process, adjectival reduplication is sensitive to word-internal structure. Thus, while the general reduplication pattern for a bisyllabic adjective noted as 'AB' is [$_{A^\circ}$ AABB] (cf. [90]), it is [$_{A^\circ}$ ABAB] for 'modifier – adjectival head' compounds such as *xuě-bái* 'snow-white'= 'as white as snow' (cf. [91]):

AB => AABB:

(90) a. *piàoliang* 'pretty' => *piàopiàoliàngliàng*
  b. *gāoxìng* 'happy' => *gāogāoxìngxìng*
  c. *qīngchu* 'clear' => *qīngqīngchǔchǔ*[32]

AB =>ABAB:

(91) a. *xuě-bái* 'snow-white' = 'as white as snow' =>*xuěbáixuěbái*
  b. *bǐ-zhí* 'brush-straight' = 'perfectly straight' => *bǐzhíbǐzhí*
  c. *gǔn-rè* 'roll-hot' = 'scalding hot' => *gǔnrègǔnrè*
  d. *tōng-hóng* 'all-red' = 'red, scarlet' => *tōnghóngtōnghóng*[33],[34]

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32 As illustrated in (90a) and (90c), the lexical tone for *-liang* and *-chu* re-emerges in the reduplicated form, while in the simple form both are in the neutral tone, as indicated by the absence of a tone mark in the transliteration.

33 Recall from section 5.1.2 above that in the repetition of the verb, the second syllable is in the neutral tone, hence [$_V$ A^{T}B^0] [$_V$ A^{T}B^0], and therefore different from the adjectival reduplica-

Furthermore, reduplication is blocked in the cases of *monomorphemic* disyllabic adjectives (cf. Tang Ting-chi 1997: 320). This holds both for 'native' adjectives (cf. [92]) and for phonetic borrowings from other languages (cf. [93]):

(92) a. *yǎotiǎo* 'graceful, gentle' => **yǎoyǎotiǎotiǎo*[35]
      b. *línglóng* 'exquisite' => **línglínglónglóng*
      c. *tángtū* 'brusque' => **tángtángtūtū*
      d. *miáotiao* 'slender' => **miáomiáotiáotiáo*

(93) a. *módēng* 'modern' => **mómódēngdēng*
      b. *yōumò* 'humourous' **yōuyōumòmò*

When an initially monomorphemic disyllabic adjective has been reanalysed as consisting of two morphemes (*backformation*), reduplication is possible. Again, backformation and the ensuing possibility of reduplication is available both for 'native' adjectives (cf. [94a]) and for phonetic borrowings (cf. [94b]):

(94) a. *hútu* 'confused, bewildered => *húhútútú*   (cf. Lu Zhiwei 1975: 18)
      b. *làngmàn* 'romantic' => *lànglàngmànmàn*
          (a phonetic borrowing of *romantic*)

Besides the AABB and ABAB reduplication pattern, there exist patterns of partial reduplication, associated with a special type of connotation. The pattern 'A*li*AB' always carries a negative connotation (cf. [96]), whereas the (total reduplication) patterns 'AA' and 'AABB' can be associated with either a positive, neutral, or negative connotation (cf. [95]):

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tion here: [$_A$ A^{T}B^{T}A^{T}B^T]. Furthermore, in the repetition of the verb, the first verb can be suffixed with e.g. the perfective aspect-*le*, another difference with respect to the reduplication of modifier-adjectival head compounds:

(i)   *Zhèi ge wèntí , wǒmen yánjiū-le   yánjiū*
      this CL problem 1PL   study -PERF study
      'This problem, we have studied it a bit.'

34 Reduplicated adjectives are different from onomatopoeia, where the original form is repeated as a whole, in general two to three times (cf. Chao Yuen Ren 1968: 210):

(i)   *pūtōng, pūtōng (pūtōng ....)* 'splash, splash'
(ii) *dīngdāng, dīngdāng (dīngdāng....)* 'ding-dong'
(iii) *dā dā (dā)* 'hammering, pounding sound' (e.g. of a typewriter, machine guns etc.)

35 Naturally, the reduplication as [$_{A°}$ ABAB] is equally excluded for all of these disyllabic monomorphemic adjectives (e.g. **[$_{A°}$ yǎotiǎoyǎotiǎo]* 'graceful'), because reserved for adjectives with the word-internal structure 'modifier head'.

(95) a. *luàn* 'chaotic' => *luànluàn* 'chaotic' (but less so than *luàn*)
      b. *bái* 'white' => *báibái* '(thoroughly) white'
      c. *cháng* 'long' => *chángcháng* 'long'

(96) a. *hútu* 'confused, bewildered' => *húlihútu* 'muddle-headed'
          (vs *húhútútú* 'confused, bewildered')
      b. *mǎhu* 'casual, careless' => *mǎlimǎhu* 'careless, sloppy'
          (vs *mǎmǎhǔhǔ* 'not bad, still ok')

In the reduplication pattern 'ABB', 'BB' provides a metaphoric description of the property denoted by the adjective (cf. Karl 1993: 287):

(97) a. *bái-huā-huā* 'white-flower-flower' = 'shining white'
      b. *bái-xuě-xuě* 'white-snow-snow' = 'as white as snow'

(98) a. *hēi-yóu-yóu* 'black-oil-oil' = 'jet-black, shiny black'
      b. *hēi-yā-yā* 'black-press-press' = 'dense, dark'
          (said of e.g. people in a crowd)

The semantics associated with reduplication is hard to capture and even more difficult to translate, which is the reason why it is not systematically rendered in the examples provided here. For reasons of space, I only sketch very briefly the interpretational effects of reduplication and for more extensive discussion refer the reader to Yang-Drocourt (2008, 2013) and C.–S. Luther Liu (2013) as well as the numerous references therein.

Adjectival reduplication mainly involves the speaker's subjective evaluation of the property expressed by the adjective. It does *not* have a quantitative effect, i.e. it does not convey a high or maximum degree of a given property; accordingly, it is not appropriate to translate a reduplicated adjective by 'very + adjective'. On the contrary, as pointed out by Zhu Dexi (1980 [1956]: 108), the most productive pattern of adjectival reduplication, i.e. 'AA(BB)' indicates that a property is exactly as it should be (*qià dào hǎochu* 'appropriate up.to good' = 'just right'). This connotation is neatly rendered by Chao (1968: 209) who translates (99) as 'nice and high slits' and adds that this is "a form of description which one would not use if one did not approve of such dresses".

(99)   *gāogāo de*$_{SUB}$ *kèn*
        high   SUB   slit
        'nice and high slits'

Evidently, the characterization of the additional meaning conveyed by the 'AABB' reduplication as "exactly right" does not hold as such for adjectives referring to negative properties as e.g. *hútu* 'confused' and *húhútútú* 'confused, bewildered'. What remains constant, though, is that when using the reduplicated form the speaker introduces a subjective component and describes the property rather than merely refers to it.

Another important point is that adjectives referring to properties perceptible to the senses such as *pàng(pàngde)* 'fat', *tián(tiánde)* 'sweet', *xiāng(xiāngde)* 'fragrant', *ruǎn(ruǎnde)* 'soft' are more likely to have a reduplicated form than e.g. adjectives referring to mental states not readily discernible, such as *tān* 'greedy' (**tāntānde)* and *cōngmíng* 'intelligent' (**cōngcōngmíngmíngde)* (cf. Tang Ting-chi 1988: 41 among others).

Finally, reduplicated adjectives are typical of the spoken language; however, in the literature they are also used for rhetorical purposes or as a means to create a personal style.

5.3.2 Derived adjectives as a distinct class

In order to obtain the full picture, another observation needs to be taken into account, viz. the fact that modifier-head adjectival compounds such as *xuě-bái* 'snow-white' = 'as white as snow' in their *non*-reduplicated form pattern with *reduplicated*, not with *simple* adjectives. As will emerge from the ensuing discussion, this is in fact the expected result, given the syntactic and semantic properties of modifier-head compounds.[36] In the remainder of the section, I therefore use the label *derived adjectives* for the class comprising reduplicated adjectives (with total or partial reduplication) as well as modifier-head compounds (reduplicated or not), in contrast to the class of *simple adjectives*.

In general, derived adjectives can function as modifiers and as predicates on their own and never imply a comparison (cf. [107]–[109] below for the very limited compatibility with degree adverbs). With the exception of modifier-head adjectival compounds in their reduplicated form, they also allow for the

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36 Chinese linguists (e.g. Zhu Dexi 1980 [1956]) have always subsumed reduplicated adjectives and modifier-head adjectives (both in their non-reduplicated and reduplicated form) under the same class of 'complex forms', without however giving an explicit motivation for this at first sight surprising classification. Cf. Paul (2006) for demonstrating that it is the unacceptability in the *de*-less modification structure of reduplicated and modifier-head adjectives (both in the non-reduplicated and the reduplicated form; cf. section 5.3.4 below) that constitutes the reason for including them in the same class.

formation of manner adverbs. (As suggested by the reviewer, adverb formation thus seems to be restricted to the reduplicated forms of gradable adjectives.)

(100) a. *gāogāoxìngxìng de*_{SUB} *háizi*
     happy   SUB   child
     'happy children'

    b. *Tā gāogāoxìngxìngde*[37]
      3SG happy
      'He is happy.'

    c. *Tā gāogāoxìngxìngde chàng gē*
      3SG happy   sing   song
      'He is singing happily.'

(101) a. *hǎohǎo de*_{SUB} *bǐ*
     good   SUB   pen
     'a perfectly good pen'

    b. *Wǒ zuótiān hái hǎohǎode, jīntiān jiù bìngdǎo le*
      1SG yesterday still good   today then be.ill   SFP

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37 In the case of reduplicated adjectives, *de* is part of the reduplicated form itself; accordingly, sentences (100b)–(102b), (104)–(105), where the reduplicated form functions as a predicate, cannot be analysed as cases of predication with *shi...de* (cf. [4a], [5a] above) from which *shi* would have been dropped. When a reduplicated adjective functions as a modifier as e.g. in (100a), I assume haplology between the *de* of the reduplicated adjective and the subordinator *de* into one surface *de*, similar to the generally acknowledged haplology of the sentence-final complementiser *le* with the perfective verbal suffix *-le* when the verb occupies the sentence-final position: V-*le le* # => *V le* # (cf. Chao Yuen Ren 1968: 247). Evidence for the haplology of the reduplication *de* with the subordinator *de* comes from Chinese dialects where these two *de*'s are phonologically different and can hence co-occur (cf. Zhu 1993).
The exact role and distribution of *de* in the reduplicates is far from clear. Lü Shuxiang (2000 [1980]: 719) only notes that *de* is optional for AABB reduplicates when functioning as the so-called *descriptive complement* introduced by *de*. (This *de* is different from those already encountered and has so far not been analysed satisfactorily; cf. chapter 8.3.3 below.)
(i) *Tā shōushi de zhěngzhěngqíqí(de)*   (Lü Shuxiang (2000 [1980]: 719)
   3SG tidy   DE neat
   'He tidied up very neatly.'
The data furthermore suggest that non-reduplicated modifier-head adjectival compounds such as *xuě-bái* 'snow-white' = 'as white as snow' preferably appear without *de*, though this cannot be generalized and also varies from speaker to speaker.

'Yesterday, I still felt ok, but today I'm ill.'

c. *Nǐ hǎohǎode gēn   tā shuō, bié shēng   qì*
2SG good   with 3SG talk   NEG produce air
'Talk to him nicely and don't get angry.'

(102) a. *tōnghóng(tōnghóng) de$_{SUB}$ liǎn*
scarlet   SUB   face
'a scarlet face'

b. *Ta de$_{SUB}$ liǎn tōnghóng(tōnghóngde)*
3SG SUB   face scarlet
'His face was scarlet.'

(103) a. *bǐ   -zhí   de$_{SUB}$ shù-gàn*
brush-straight SUB   tree-trunk
'perfectly straight tree trunks'

b. *Gōnglù bǐ   -zhí*
highway brush-straight
'The highway is perfectly straight.'

c. *Tā bǐzhíde   zhàn zài lǎoshī de qiánmiàn*
3SG perfectly.straight stand at   teacher SUB front
'He is standing perfectly straight in front of the teacher.'

(104) *Liǎn chángchángde, yáchǐ yě   chángchángde*
face long   tooth also long
'The face is long, and the teeth are long, too.'   (Zhu Dexi 1980[1956]: 11)

(105) *Tiān yǐjīng   hēi -hūhūde le*
sky already dark-HUHU   SFP[38]
'The sky is already dark.'

Unlike simple adjectives, derived adjectives cannot appear in the comparative construction and are incompatible with degree adverbs such as *hěn* 'very', *fēicháng* 'extremely', *tèbié* 'particularly' etc. Adverbs such as *zhème*, *nàme*

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38 No meaning is associated with *hūhū* on its own.

'this/that way; so, such' are, however, acceptable (and for some native speakers also *tài* 'too', cf. [107]):

(106) *Tā de yīfu   bǐ   nǐ   de gèng   bái/*
       3SG SUB clothes compared.to 2SG SUB even.more white/
       *gèng   gānjìng /*báibáide/*gāngānjìngjìngde/*xuě -bái*
       even.more clean / white / clean   / snow-white
       'His clothes are (even) cleaner/whiter/*more snow-white than yours.'

(107) *Tā fēicháng   pàng/*fēicháng pàngpàngde/#tài pàngpàngde*
       3SG extremely fat / extremely fat   / too fat
       'He is very fat/too fat.'

(108) a. * *Tā de liǎnsè   tèbié   tōnghóng(tōnghóngde)*
          3SG SUB complexion particularly   scarlet
          ('His face is particularly scarlet.')

      b. *Tā de liǎnsè   wèishénme nàme tōnghóng(tōnghóngde)?*
          3SG SUB complexion why   so   scarlet
          'Why is his face so scarlet?'

(109)   *Lǎo   zhème   màn-tēngtēngde kě   bù   xíng* [39]
        always this.way slow-TENGTENG   really NEG possible
        'It's impossible to be always so sluggish.'

Unlike simple adjectives, derived adjectives cannot be negated by *bù*. They can only be negated by *bù shì* 'not be' = 'it is not the case that' (cf. [110b]), which has scope over the entire proposition and can therefore bear on any part thereof; the identification of the negated part is then determined by the obligatory continuation. Example (110b) also nicely illustrates the subjective description associated with reduplication and absent in simple adjectives, which in the case of *pàngpàngde* 'plump' is an approving, positive attitude expressed by the speaker, contrasting with *tài pàng* 'too fat':

(110) a. *Tā bù pàng /*bù pàngpàngde*
          3SG NEG fat / NEG fat
          'He is not fat.'

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39 No meaning is associated with *tēngtēng* on its own

b. *Tā bù shì pàngpàngde, érshì tài pàng le*
3SG NEG be fat   but too fat SFP
'He is not [nicely] plump, but he is [simply] too fat.'

(111)   *Tā de yīfu   bù gānjìng/*
3SG SUB clothes NEG clean/
*bù gāngānjìngjìngde/*bù xuěbái(xuěbáide)
NEG clean   / NEG snow.white
'His clothes are not clean/as white as snow.'

As illustrated in (100)–(105) above, derived adjectives can very well function as predicates on their own and be modified by VP-level adverbs such as *hái* 'still', *yě* 'also' *yǐjīng* 'already' which only precede predicative elements (cf. [101b], [104], [105]). The incompatibility with negation and with degree adverbs, equally typical of predicative elements, can therefore not be due to syntax, but must have semantic reasons.

The unacceptability of modifier-head compounds such as *xuě-bái* 'snow-white' in the comparative construction (cf. [106] above) allows us to determine the semantic nature of the problem. Derived adjectives are not admitted here, because a comparison involves determining the degree value (superior, inferior) of a given property on a gradable scale, not a (subjective) description of this property. The predominance of this descriptive component in derived adjectives is particularly visible in the case of modifier-head compounds:

(112)   *Tā de yīfu   bù shì xuě -bái,*
3SG SUB clothes NEG be snow-white

érshì bǐ   xuě hái bái
but commpared.to snow still white
'It is not the case that her dress is as white as snow, but it is even whiter than snow.'

The second clause in (112) is obligatory, because it makes explicit that it is the descriptive component ('like snow') which is negated, not the property itself. The latter cannot be negated, hence the incompatibility with *bù* observed in (111) above. This line of reasoning, showing the incompatibility of derived adjectives with negation to have a semantic, not a syntactic source is corroborated by the acceptability of derived adjectives with adverbs of intensity such as *zhème*, *nàme* 'so, such' in (108) and (109) above. Consequently, derived adjectives are not on a par with absolute adjectives such as *fāng* 'square', *cuò*

'wrong'; the latter do not allow these adverbs, because they are essentially binary. Also recall that absolute adjectives - being "non-predicative" adjectives - need *shì...de* in order to form a predicate (cf. section 5.1.1 above), another constrast with respect to the systematically predicative derived adjectives.

Finally, the positive degree interpretation observed for derived adjectives (also cf. C.–S. Luther Liu 2013), augmented by the descriptive component in modifer-head compounds or by the special semantics associated with reduplication, in combination with the systematic lack of a comparative degree interpretation presents a challenge for the current analyses of the adverb *hěn* 'very'. Recall that *hěn* plays a decisive role in the positive degree interpretation of *simple* adjectives in predicative function (cf. section 5.1.4 above), and is either analysed as licensor of the covert positive degree morpheme (cf. C.–S. Luther Liu 2010) or as head of a Degree projection intervening between TP and the AP (cf. Grano 2012). As far as I can see, these analyses of *hěn* cannot be maintained in light of the class of derived adjectives, and further research is called for here. In any case, these latter musings highlight the point I want to make here, i.e. the status of derived adjectives as a class distinct from simple adjectives. In addition to their systematic ability to function as predicates and modifiers and to allow for the formation of manner adverbs, derived adjectives also behave alike with respect to two other phenomena, viz. compound formation and *de*-less modification.

5.3.3 The unacceptability of derived adjectives in verbal compounds

As has been observed in the literature, reduplicated adjectives - unlike their simple counterparts - are excluded from the formation of resultative verb compounds of the form 'verb-adjective' where the adjective indicates the result of the action expressed by the verb:

(113) a. *Tā bǎ zhuōzi cā -gānjìng-le*   (Sybesma 1991b: 133, [13], [14])
          3SG BA table   wipe-clean -PERF
          'He wiped the table clean.'

       b. * *Tā bǎ zhuōzi cā -gāngānjìngjìng-le*
           3SG BA table   wipe-clean   -PERF

(114) a. *Tā bǎ chuángdān dié -zhěngqí-le*
          3SG BA sheet   fold-neat   -PERF
          'He folded the sheets neatly.'

b. * *Tā bǎ chuángdān dié -zhěngzhěngqíqí-le*
   3SG BA sheet   fold-neat   -PERF

(115) a. *Wūzi de qiáng dōu shuā-baí -le*
   room SUB wall all paint-white-PERF
   'The walls of the room are all painted white.'

b. * *Wūzi de qiáng dōu shuā-baíbaí-le*
   room SUB wall all paint-white-PERF

(116) a. *Lúzi shāo-rè -le*
   stove burn-hot-PERF
   'The stove has burnt itself hot.'

b. * *Lúzi shāo-rèrè-le*
   stove burn-hot-PERF

Since disyllabic adjectives (cf. [113a], [114a]) are as acceptable in these compounds as monosyllabic ones (cf. [115a], [116a]), the unacceptability of the 'AA' reduplicates in examples (115b) and (116b) cannot be reduced to a phonotactic constraint sensitive to the number of syllables. As demonstrated below, the same constraint holds equally for (non-reduplicated) 'modifier-head' adjectival compounds, i.e. like reduplicated adjectives, they cannot enter into the formation of resultative verbal compounds:

(117) a. *Tā kū -hóng-le   yǎnjing*
   3SG cry-red -PERF eye
   'He cried his eyes red.'

b. *Tā kū -tōnghóng-le   yǎnjing*
   3SG cry-scarlet -PERF eye

(118) a. *Tā shǒu dòng -hóng-le*
   3SG hand freeze-red -PERF
   'His hands were red-frozen.'

b. *Tā shǒu dòng -tōnghóng-le*
   3SG hand freeze-scarlet -PERF

(119) a. *Wūzi de qiáng dōu shuā-baí -le* (= [115a] above)
room SUB wall all paint-white-PERF
'The walls of the room are all painted white.'

b. * *Wūzi de qiáng dōu shuā-xuě -baí-le*
room SUB wall all paint-snow-white-PERF

(120) a. *Diànxiàn lā -zhí -le*
electric.wire pull-straight-PERF
'The electric wire has been pulled straight.'

b. * *Diànxiàn lā -bǐ -zhí -le*
electric.wire pull-brush-straight-PERF

The general ban on derived adjectives to enter into the formation of resultative verb compounds clearly sets them apart from the class of simple adjectives. It also further corroborates the claim that modifier-head compounds – both in their non-reduplicated as well as in their reduplicated form – belong to the same class of derived adjectives as reduplicated adjectives.

5.3.4 The unacceptability of derived adjectives in *de*-less modification

Another important characteristic of derived adjectives is their unacceptability in the *de*-less modification structure (cf. Lü Shuxiang 2000 [1980]: 719):

(121) a. *gānjìng (de$_{sub}$) yīfu*
clean SUB clothes
'clean clothes'

b. *gāngānjìngjìng *(de$_{sub}$) yīfu*
clean SUB clothes
'clean clothes'

(122) a. *bái (de$_{sub}$) zhǐ*
white SUB paper
'white paper'

b. *báibái/ xuě -bái / xuěbáixuěbái *(de$_{sub}$) zhǐ*
white/ snow-white/ snow-white SUB paper

'(snow-) white paper'

(123) a. *hóng (de$_{sub}$) chènshān*
red   SUB   shirt
'a red shirt'

b. *tōnghóng/ hónghóng *(de$_{sub}$) chènshān*
scarlet / red   SUB   shirt
'a scarlet shirt'

As argued for at length in sections 5.1.2 and 5.1.3 above, this unacceptability cannot be reduced to a prosodic ban against non-monosyllabic adjectives in the *de*-less modification structure nor to alleged wordhood of the sequence 'adjective N' (*contra* Sproat and Shih 1988, Duanmu San 1997, Lu and Duanmu 2002). Instead, I propose an account in semantico-pragmatic terms. As noted by Zhu Dexi (1980 [1956]: 5-6) and subsequent authors (cf. e.g. Tang Ting-chi 1988: 36), reduplicated adjectives introduce the speaker's subjective evaluation of the property expressed by the adjective rather than referring solely to that property (as is the case with simple adjectives). Accordingly, reduplicated adjectives cannot be interpreted as defining properties and are excluded from the *de*-less modification structure, for the resulting NP does not satisfy the condition of a plausible, natural classification. The same reasoning applies to modifier-head compounds such as *xuě-bái* 'snow-white' = 'as white as snow', *bǐ-zhí* 'brush-straight' = 'perfectly straight' etc.: as their internal structure shows, these adjectives provide the description of a property ('as white as snow', 'as straight as a brush') rather than purely refer to it. It is this semantic component of evaluating or describing a property, in contrast to referring to a property, which is shared by reduplicated adjectives and modifier-head compounds and which explains their belonging to the same class.[40]

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40 Note that *encoding* the speaker's subjective evaluation via a derived adjective should not be confounded with whatever subjective connotation may enter into the meaning of (stage-level predicate) adjectives such as *gānjìng* 'clean', *piàoliang* 'pretty', *qíguài* 'bizarre'. The fact that the latter *are* acceptable in the *de*-less modification structure (cf. [16], [17] above), whereas derived adjectives are not, clearly shows that the grammar of Chinese makes this distinction.

5.3.5 The productivity of the 'AABB' reduplication pattern

The systematic syntactic and semantic differences between simple and derived adjectives discussed so far justify their analysis as two separate morphological classes, the relation between them being one of derivation. Among the different derivation processes (modifier-head compound formation, total or partial reduplication), the 'AABB' reduplication represents the productive and regular pattern.[41] This is evidenced by the fact that the derivation of 'AABB' reduplicates is not limited to cases where a corresponding simple adjective 'AB' exists, but applies to all kinds of morphemes. Importantly, the resulting 'AABB' reduplicates once again have the three properties typical of the class of derived adjectives: they can function as predicates (on their own) and as modifiers and allow for the formation of manner adverbs (Note, though, that some reduplicates are confined to adverb formation only; cf. [126] and [127]).

(124) a. *pó-   -pó   -mā   -mā*   'womanish, fussy, sentimental'
old.lady-old.lady-mother-mother
(N.B. There exists no "corresponding" *pó-mā*)

b. *Zhè ge rén   pópómāmāde*
this CL person fussy
'This person is fussy.'

c. *Wǒ bù xǐhuan zhè ge pópómāmā de*_{SUB} *rén*
1SG NEG like   this CL fussy   SUB   person
'I don't like this fussy person.'

d. *Tā pópómāmāde shuō-le   yī dà duī*
3SG fussy   talk -PERF 1 big heap
'He fussily talked a lot.'

(125) a. *guǐ -guǐ -suì   -suì*   'furtive, stealthy, sneaky'
ghost-ghost-evil.spirit-evil.spirit
(N.B. There exists no "corresponding" *guǐ-suì*)

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41 In the literature, however, new reduplication patterns are created as part of a writer's personal style. For example, the writer Yan Lianke freely uses the so far non-existing reduplication schema 'ABCC' as in *fěn-hóng-dàn-dàn* 'pink-red-bright-bright'. Importantly, as emphasized by Yang–Drocourt (2008: 89–92), these new creations are perfectly intelligible to the native speaker, including their stylistic effects.

b. *Zhè jiāhuo guǐguǐsuìsuìde*
   this guy   stealthy
   'This guy is stealthy.'

c. *yī ge guǐguǐsuìsuì de*_{SUB} *xiǎotōu*
   1 CL stealthy   SUB   thief
   'a stealthy thief'

d. *Zhè ge xiǎotōu guǐguǐsuìsuìde pǎo dào wūzi lǐ lái*
   this CL thief   stealthy   run to house in come
   'This thief ran stealthily into the house.'

(126) a. *kū -kū -tí   -tí*
      cry-cry-weep.aloud-weep.aloud
      'with sobs and tears, weeping and wailing'

b. *Tā kūkūtítíde   pǎo-guò-lái*
   3SG weeping.and.wailing run-pass-come
   'He came running over weeping and wailing.'

(127) a. *sān-sān-liǎng-liǎng*   'by two's and three's'
      3 -3   -2   -2

b. *Tāmen sānsānliǎngliǎngde zǒujìn-le   jiàoshì*
   3PL   by.two's.and.three's enter -PERF classroom
   'They entered the classroom by two's and three's.'

These cases illustrate the derivational nature of reduplication in a particularly clear fashion, the output being the same, independently of the categorial identity of the input.

Finally, it is also clear that certain morphological structures block reduplication, giving rise to systematic gaps in the paradigm. This is the case for all adjectives of the form [_{Adj} kě-X] such as *kě'ài* 'lovable', *kěkào* 'reliable', *kělián* 'pitiable' where *kě-* corresponds to the English *-able*. In addition, none of these adjectives [*kě-X*] is accceptable in *de*-less modification, showing that they belong to the class of derived adjectives. Unlike the modifier-head compounds such as *xué-bái* 'snow–white', however, the internal structure of the [*kě-X*] adjectives blocks reduplication. This illustrates that the morphological structure plays a much more important role in Chinese than hitherto assumed.

5.3.6 Interim summary

There are two morphologically different classes of adjectives in Chinese, viz. simple vs derived adjectives. The class of derived adjectives subsumes (completely and partially) reduplicated adjectives as well as modifier-head compounds, both in their reduplicated and nonreduplicated form. Besides allowing for the formation of manner adverbs, derived adjectives can systematically function as modifiers (with *de*) and as predicates on their own; accordingly, they lack the division into "predicative" and "non-predicative" adjectives observed for the class of simple adjectives. For derived adjectives, the predicative function as well as the obligatory presence of *de* in modification structures are thus predictable properties. The common semantic denominator of derived adjectives is to evaluate or describe a property rather than solely refer to it (as simple adjectives do). It is this special semantics of derived adjectives which explains their incompatibility with degree adverbs and with negation as well as their unacceptability in the comparative construction and the *de*-less modification structure.

While with respect to their unacceptability in the *de*-less modification structure, Adjectival Phrases of the form 'adverb + adjective' behave on a par with derived adjectives, APs can evidently not be included under the cateory of derived adjectives as suggested in the traditional Chinese classification (cf. Zhu 1980 [1956]), for the simple reason that phrasal extensions of a lexical category should not be included in a classification of lexical categories (cf. Paul 2006). In addition, there are numerous arguments showing that the "parallelism" between the class of derived adjectives and APs does not exist beyond *de*-less modification.

Unlike derived adjectives, APs can be negated by *bù* (cf. [128]) and can occur in the comparative construction (cf. [129]). There are no morphological constraints on the well-formedness of APs, i.e. APs are not sensitive to the internal structure of the adjective (bi-vs monomorphemic; modifier head relation etc.) nor to the type of property encoded. Accordingly, monomorphemic disyllabic adjectives as well as adjectives of the form [Adj *kě*–X], which are both excluded from reduplication, can project an AP (cf. [130]). Likewise, adjectives referring to mental states that are not readily discernible and therefore disallow reduplication (e.g. *cōngmíng* 'intelligent', **cōngcōngmíngmíngde*; *tān* 'greedy', **tāntānde*; cf. section 5.3.1 above) can evidently head an AP (cf. [131]).

(128) *Tā jīntiān bù [AP tài gāoxìng]*
       3SG today NEG   too cheerful
       'He's not very cheerful today.'

(129) *Tā bǐ   nǐ [*AP* gèng   cōngmíng]*
      3SG compared.to 2SG   even.more intelligent
      'He is even more intelligent than you.'

(130) a. *Tā hěn módeng*
          3SG very modern
          'He is modern.'

      b. *Tā bǐjiào   kěkào*
          3SG relatively reliable
          'He's relatively reliable.'

(131) *Tā fēicháng   cōngmíng*
       3SG extremely intelligent
       'She is extremely intelligent.'

Finally, the fact that the 'AABB' reduplication pattern applies to all kinds of morphemes (cf. examples [124]–[127] in the preceding section) and is not restricted to existing simple adjectives clearly invalidates any possible parallel with APs.

5.4 Conclusion

This chapter has provided extensive evidence for adjectives as a separate category in Mandarin Chinese, distinct from verbs. More precisely, Chinese has as many as *two* morphologically different classes of adjectives, simple and derived adjectives, each with its own set of predictable semantic and syntactic properties. This is an "unexpected" result insofar as Chinese as an isolating language is in general assumed to have an impoverished categorial inventory. In addition, reduplication as a productive morphological process does not fit into our picture of isolating languages, either.

Another important result obtained is that typological studies of adnominal modification have to take into account the modification structure with *de*, [DP A *de* N], and without *de*, [NP A N], given that both are phrasal (*contra* Sproat and Shih 1988, 1991). The same constraint in terms of a natural, (culturally) plausible class that holds for English prenominal modification (cf. Bolinger 1967) is valid for Chinese *de*-less modification as well, once again reducing the "exotic" character of Chinese .

Finally, in this chapter, current proposals have been invalidated which ana-lyse all adnominal modifiers subordinated by *de* as either relative clauses (cf. Sproat and Shih 1988, 1991; Duanmu San 1998; Simpson 2001) or as small clauses (cf. Den Dikken and Singhapreecha 2004).

6 The syntax and semantics of the sentence periphery (part I): What the topic is (not) about*

This chapter turns to the domain left of the subject, i.e. the *left periphery* or *sentence periphery*. More precisely, it examines in depth the topic position and its syntactic and semantic properties. This is necessary because since Li and Thompson (1976), the (non-)availability of a topic position has counted as a major typological characteristic dividing languages into those which are *topic prominent* and those which are not.[1] Another influential claim made by Li and Thompson (1976, 1981) is that a topic always conveys given information and indicates "what the sentence is about".[2]

This characterization of the topic is, however, not complete, as demonstrated in the remainder of the chapter. Instead, Chafe's (1976: 51) view of the topic as "the frame within which the sentence holds" is argued to be necessary as well, for example in the case of multiple topics, where it is not self-evident to single out the one the sentence "is about". In addition, Chafe's (1976) definition of the topic in terms of frame can also accommodate the cases where the constituent in the topic position is not a referential expression (DP), but a clause or an adverbial expression. Last, but not least, as pointed out by Reinhart (1982) a topic cannot only convey given, but also new information. Accordingly, a topic cannot be automatically associated with a fixed informational value. Instead, the interpretation of a constituent in the topic position results from the interaction between its syntactic and semantic properties, the default values associated with the topic position itself ("aboutness" or "frame") and the properties of the predicate within the sentence. In fact, the impossibility to establish an automatic link between a syntactic position and a particular informational content is

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* This chapter is based on the successive versions since 2006 of an unpublished manuscript entitled "What the topic is (not) about: The case of Mandarin Chinese".

1 For a critical review of the notion *topic prominence* and arguments showing that it is not a unitary phenomenon and hence cannot serve as a typological parameter, cf. Paul and Whitman (to appear).

2 Li and Thompson (1976: 462; section 2, point [d]) state: "The topic is the 'center of attention'; it announces the theme of the discourse. This is why the topic must be definite ...". In Li and Thompson (1981: 85) we find the following formulation: "... the topic [is] characterized as what the sentence is about. ...In addition, the topic always refers either to something that the hearer already knows about – that is, it is *definite* – or to a class of entities – that is, it is *generic* ...".

observed to likewise hold for sentence-internal positions in Chinese, and in this respect the topic position just behaves like any other position.

The organization of the chapter is as follows. Section 6.1 gives an overview of the interpretations available for topics. Since examples where the topic conveys given information are abundantly cited in the literature, section 6.1.1 concentrates on examples where the topic provides new information. These cases nicely tie in with Bianchi and Frascarelli's (2010) study of Romance and Germanic languages, for which they posit, among others, an "aboutness shift" topic precisely involving the introduction of a new information topic. In section 6.1.2, Chafe's (1976) definition of the topic as "frame-setting" is shown to be required in addition to the aboutness topic in Bianchi and Frascarelli's (2010) sense, i.e. open for both given and new information. Section 6.1.3. addresses the frequent confusion between contrastive topic and focus and demonstrates that any constituent in any position can be be assigned a contrastive interpretation in Chinese; as a result, contrastiveness must be distinguished from focus. After an interim summary in section 6.1.4, the differences between topic and (narrow) focus are further examined in section 6.1.5. While the XP in the focus cleft construction '*shì* [XP [S VP]]' with sentence-initial "bare" *shi* 'be' is subject to the *Exclusiveness Condition* (cf. Szabolcsi 1981), a topic is not. Furthermore, given that *shì* 'be' is the matrix predicate selecting the following clause as its complement, the focussed constituent (XP) is located in the periphery of the complement clause, not in the periphery of the matrix clause. As a result, there is no focus cleft projection in the matrix left periphery in Chinese; the only type of focus allowed here is the *lián* 'even' focus (discussed in section 6.4.1 below). Section 6.2. adopts the by now general consensus that a topic is either moved to the topic position from within the comment clause (TP) or directly merged in the topic position (*in situ* topics). It explores the consequences of these two possible derivations for adjunct phrases in the topic position, an issue so far neglected in the literature. Section 6.3 argues for the necessity of keeping topic and subject apart and of avoiding notations such as "topic/subject" conflating the two. In section 6.4, Chinese is shown to have a sentence-*internal* topic to the right of the subject in addition to the sentence-*external* topic to the left of the subject. In this respect, Chinese is on a par with e.g. Romance languages, which have been at the basis of the so-called "cartographic" approach to the sentence periphery initiated by Rizzi (1997). In this approach, the sentence periphery is "split up" into numerous subprojections, among them topic and focus projections. As first shown by Belletti (2004), the hierarchy of projections constituting the left periphery above the subject can also be found in the periphery of the verbal projection below the subject. This is confirmed by Chinese where the only type of focus allowed in the matrix clause periphery, i.e. the *lián* 'even' focus', follows

the topic and where this strict order 'topic > *lián* 'even' focus' is also respected in the periphery below the subject. In conjunction with other arguments presented in section 6.4.1, the possibility for the sentence-internal topic to co-occur with the *lián* 'even' focus challenges the frequent analysis of the sentence-internal topic itself as a focus. After a comparison of the sentence-internal topic with the sentence-external topic in section 6.4.2, section 6.4.3. provides several diagnostic criteria to distinguish an SOV sequence involving a sentence-*internal* topic from the superficially identical SOV sequence resulting from movement to the sentence-*external* topic position of both the subject and the object. Section 6.5 concludes the chapter and discusses why the cartographic approach – though partially successful – cannot serve as the general framework to account for the overall syntax and semantics of the sentence periphery in Chinese.

6.1 The range of interpretations available for topics

Since the literature abounds with examples of topics conveying given information typically involving DPs with a demonstrative pronoun as in (1), I leave data of this type aside.

(1)   [*DP* *Zhè   jiàn   shì   ], nǐ   jiù   fàng   xīn   ba*
                this   CL   matter 2SG then put   heart SFP
        'Concerning this matter, you can put your mind at ease.'
        (Lü Shuxiang 1986: 334)

Instead, I concentrate on discussing the – after all rather numerous – cases where the topic carries new information, in order to substantiate my claim that topics can convey given *and* new information alike and are *not* associated with a particular informational value.

    Note that I use the term *topic* here as short for a phrase (XP) occupying a topic position (TP-external or TP-internal) rather than in the often encountered semantico-pragmatic sense of "topic of discourse" (indicating the subject matter of the sentence in general, irrespective of the syntactic position at hand).[3] In the case of a sentence-external topic, the position in question is the sentence-initial position to the left of the subject. More precisely, the topic occupies the specifier

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3 Since not only NPs and DPs, but a large array of other phrases (Adpositional Phrases, Quantifier Phrases, clauses, adverbs etc.) can be topics (cf. section 6.1.2 below), I use the category-neutral term XP here.

position of the functional projection Topic Phrase (TopP) whose head, Topic°, either selects a sentence (TP) as complement or another TopP, thus giving rise to multiple topics (cf. Gasde and Paul 1996). (For discussion of the *lián* 'even' focus projection likewise present in the left periphery, cf. section 6.4 below.)

(2) a. Nǐ de bóshìlùnwén zěnmeyàng?
         2SG SUB dissertation   how
         'How is your thesis going?'

    b. *Wǒ hái yào xiě jiélùn,   shūmù;* [*TopP* *dábiàn* [*Top'*[*Top°* *ne*]
        1SG still want write conclusion bibliography defence   TOP
        [*TP* *wǒ bù zhīdao Lǐ jiàoshòu yǒu méi yǒu kòng]]]*
            1SG NEG know   Li professor have NEG have time
        'I still have to write the conclusion and the bibliography; concerning
         the defence, I don't know yet whether Professor Li is available.'

The head position of TopP can be realized by so-called *pause particles* such as *ne* (cf. Gasde and Paul 1996, Paul 2005b).[4] The semantic effect of *ne* is to indicate that the topic in question is another member of the series partially enumerated in the preceding discourse or implicitly understood (cf. Lü Shuxiang 2000

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4 Whether the so-called pause particles such as *(y)a*, *ma* (noted *me* by Chao [1968] in [3]), *le* etc. all instantiate the head of TopP or simply mark a pause is still a matter of debate (cf. Victor Junnan Pan 2011b; Badan 2007). In the following, I use *ne* if possible, i.e. if the semantic conditions just outlined are given, because its status as Top° is relatively uncontroversial.

Also note that I avoid the term *topic marker* for the instantiations of Top° such as *ne*, because this might lead to the misunderstanding that *ne* forms a constituent with the topic and that a phrase XP in any position can be marked as topic by simply adding *ne*. This is, however, not the case, as witnessed by the incompatibility of *ne* with an XP added as an "afterthought" at the end of the sentence:

(i)   [*TopP* *Quèshí* [*Top'* [*Top°* *ne*] [*TP* *tā de nénglì shì bǐ   wǒ qiáng]]]*
              indeed   TOP 3SG SUB ability be compared.with 1SG strong
      'His abilities are indeed greater than mine.'

(ii) [*TP* *Tā de nénglì shì bǐ   wǒ qiáng], quèshí (*ne)*
          3SG SUB ability be compared.with 1SG strong indeed   TOP
      'His abilities are greater than mine, indeed.'

In (i), the adverb *quèshí* 'indeed' occupies the topic position and hence can be followed by *ne* (cf. section 6.1.2 below for an illustration of the large array of XPs acceptable in the topic position). In (ii), by contrast, the same adverb *quèshí* 'indeed' is added as an afterthought and adjoined to the right of the entire sentence. *Ne* is unacceptable in the afterthought part because as the head *Topic* it must select a TP or TopP complement to its right. (ii) also illustrates that the XP and *ne* do not form a constituent.

[1980]: 413). *Dàbiàn* 'defence' in (2b), for example, represents one of the items in the list of things still to take care of in relation with the thesis, along with *jiélùn* 'conclusion' and *shūmù* 'bibliography' (the latter two occurring in the canonical postverbal object position).

6.1.1 Topics do not exclusively convey given information

A closer look at the question/answer pair in (2a)/(2b) reveals that the topic *dàbiàn* 'defence' provides a partial answer, hence new information, to the preceding request, on a par with *jiélùn* 'conclusion' and *shūmù* 'bibliography'. While naturally all these items have to do with the thesis (for otherwise the answer given to the request about the progress of the thesis would simply be nonsensical), they nevertheless provide new information, because they are chosen among the myriad of possible aspects of thesis writing such as introduction, preface, summary, award ceremony etc.

Examples of the type illustrated in (2b) thus challenge the view that a topic is automatically associated with given information, a view dominant both in Chinese linguistics (cf. among many others Li and Thompson 1981, sections 2.3, 4.1; Shi Dingxu 2000; Xu Liejiong 2006; Badan 2007; Del Gobbo and Badan 2010; Cheng and Sybesma 2015) and beyond (e.g. in the cartographic approach of the left periphery, mainly based on Romance and Germanic languages; cf. among others Rizzi 1997, 2004; Belletti 2004, Frey 2004).

6.1.1.1 Topics in questions and answers
Upon careful scrutiny Mandarin Chinese reveals many more such cases where the topic conveys new information. For example, the topic itself can provide the answer to a preceding *wh*-question and hence must carry new information:

(3)   a.   *Wǒmen shénme shíhou jiàn miàn?*
           1PL   what   time   see   face
           'When will we see each other?'

     b.   *Jīntiān wǒ bù néng; míngtiān me, dài huìr zài shuō ba*
           today   1SG NEG can   tomorrow TOP wait while again talk SFP
           'I can't today; as for tomorrow, well, let's talk about it later.'
           (Chao 1968: 801; question context [3a] added)

Discourse-linked *wh*-phrases in TopP (cf. Victor Junnan Pan 2011b, ch 7) are a request for information and cannot constitute given information, either. Similarly, the topic given as answer to such a question must carry new information:

(4) a. *[TopP Nǎ   jiàn yīfu [TP nǐ yǐjīng   shì-guo le]*?
         which CL dress   2SG already try-EXP SFP
         'Which (of the) dress(es) have you already tried on?

   b. *[TopP Zhè sān jiàn [wǒ yijing   shì-guo le]*,
         this 3   CL 1SG already try-EXP PART
      [TopP qítā de [TP pro hái   méiyǒu]]
         other SUB   still NEG
         'These three dresses, I have already tried on, the others, I haven't.'

(5) a. *[TopP Nǎ   ge cài [TP nǐ zuì   xǐhuān chī]]*?
         which CL dish   2SG most like   eat
         'Which (of the) dish(es) do you like most?'

   b. *[TopP Niúròumiàn [TP wǒ zuì   xǐhuan (chī)]*
         beef.noodles   1SG most like   eat
      kěshì guōtiēr   yě   bùcuò
         but   fried.dumpling also good
         'Beef noodles, I like most; but fried dumplings are good, too.'

   c. *#Wǒ zuì   xǐhuan (chī) niúròumiàn*
         1SG most like   eat beef.noodles
         'I like beef noodles most.'

Importantly, the answer where the requested item occupies the topic position (cf. [5b]), i.e. the same position as the D-linked *wh*-phrase, is more felicitous than the answer where it occurs in the canonical postverbal object position (cf. [5c]). Furthermore, the continuation *kěshì guōtiēr yě bùcuò* 'but fried dumplings are good, too' shows that D-linked questions are not subject to the *Exclusiveness Condition* (cf. Szabolcsi 1981 as well as the discussion in section 6.1.5 below).

As indicated in the translation, a D-linked *wh*-phrase questions one or several items out of a given set: 'which X' or 'which of the Xs' (cf. Pesetsky 1987). This is not the case for plain *wh*-phrases such as *shénme* 'what', *shéi* 'who' for

which no such presupposed set exists and which accordingly are only accept-able *in situ*, but not in topic position:[5]

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5 As demonstrated by Yuan and Dugarova (2012: 536–537), plain *wh*-phrases are only accept-able in the topic position if a D-linked interpretation is imposed by mentioning the set among which to choose and/or by using a predicate that implies the existence of such a set, as is the case for predicates modified by the adverb *zuì* 'most':

(i) *(Xiǎo Wáng, Xiǎo Liú, Xiao Lì, zhè jǐ ge nǚhái dāngzhōng,)*
     Xiao Wang Xiao Liu Xiao Li this few CL girl among
     shéi Zhāngsān zuì xiǎng jiàn?
     who Zhangsan most like meet
     '(Of the girls, i.e., Xiao Wang, Xiao Liu, and Xiao Li,) who does Zhangsan like
      to meet most?'

(ii) **Shéi Zhāngsān xiǎng jiàn?*
      who Zhangsan like meet

When these special conditions are not met (cf. [ii]), Yuan and Dugarova's (2012) group of native speakers rejects topicalized plain *wh*-phrases *shénme* 'what' and *shéi* 'who' (*pace* Wu Jiangxin 1999 among others) and thus confirms the results obtained in Victor Junnan Pan (2011b, ch. 7). In addition to [*nǎ* classifier N] 'which (of the) N' *wh*-phrases, *wh*-phrases with *shenme* as modi-fier also allow for a D-linked reading and hence are acceptable in the topic position:

(iii) [TopP *Shénme diànyǐng*] [TP *nǐ xǐhuān kàn*]]?
            what movie 2SG like see
       'What movie(s) do you like to watch?'

To complete the picture, D-linked *wh*-phrases can evidently also remain *in situ*:

(iv) [TP *Nǐ xǐhuān kàn shénme diànyǐng/nǎ yī bù diànyǐng*]]?
            2SG like watch what movie / which 1 CL movie
      'What movie(s)/which movie(s) do you like to watch?'

The reviewer raises the question of the role of the adverb *dàodǐ* 'after all, in fact' in D-linked *wh*-phrases. (There is no good English equivalent for *dàodǐ* in questions; German *eigentlich*, *letztendlich* and French *en fin de compte*, *en définitive* are better approximations.) Since *dàodǐ* is compatible with both plain (v) and D-linked *wh*-phrases (vi, vii), Huang and Ochi (2003: 291) conclude that it is not on a par with *the hell* in English, precisely excluded from D-linked *wh* questions (cf. Pesetsky 1987). This lack of a parallel with English *the hell* is further confirmed by the acceptability of *dàodǐ* in yes/no questions of the 'A-not-A' type (cf. [viii]):

(v) *Dàodǐ shéi qù?*   (vi) *Dàodǐ nǎ yī ge hǎo?*
     after.all who go   after.all which 1 CL good
     'Who will go there in the end?'   'Which one is good in the end?'
     (Lü Shuxiang 2000 [1980]: 153)

(vii) *Tā dàodǐ yào kàn nǎ yī běn shū?*
       3SG after.all want see which 1 CL book
       'Which book does he want to read in the end?'   (Huang and Ochi 2003: 291)

(viii) *Nǐ dàodǐ qù bù qù?*
        2SG after.all go NEG go
        'Will you go there in the end?'

(6) a. *[TP Nǐ yǐjīng shì-guo shénme]?*
                2SG already try-EXP what
          'What have you already tried on?'

     b. *★[TopP Shénme [TP nǐ yǐjīng shì-guo]]?*
                what   2SG already try-EXP

Importantly, Chinese is not the only language where D-linked *wh*-phrases can occur in the topic position; for a similar case in German, cf. Grohmann (2006).

6.1.1.2 New vs "expected" information

It is perfectly possible to posit an element carrying new information as the topic of a sentence. Example (7) with *niúròu* 'beef' in the topic position can be the first sentence uttered by a customer in a butcher shop. (8) is possible in a context where the person addressed is visiting the office and the speaker tries to elicit information from the visitor in order to decide to whom he should be introduced. Crucially, (7) and (8) are felicitous without the DP in topic position being referred to in the preceding discourse or singled out by the extralinguistic context; also note that they are not interpreted contrastively here.

(7) *Niúròu, nǐ gěi wǒ liǎng jīn*
     beef   2SG give 1SG 2   pound
     'Beef, give me two pounds.'

(8) *Wǒmen de fùzhǔrèn,   nǐ rènshi ma?*
     1PL   SUB deputy.director 2SG know SFP
     'Our deputy director, do you know him?'   (Lu Jianming 1980: 34)

Potential objections against the new information status of the topics in (7) – (8) above raise the point that e.g. (7) is only felicitous in a butcher shop and that accordingly *niúròu* 'beef' is (partially) expected, hence (partially) given. The same reasoning is applied to (8) where *wǒmen de fùzhǔrèn* 'our deputy director' is said to be among the plausible people to meet in an office. However, the fact to be uttered in an extralinguistically appropriate context is on a different level from the distribution of new and given information. That is, a sentence where *niúròu* 'beef' occupies the postverbal object position (cf. [9])) would be as infelicitous in a bakery as sentence (7) above with *niúròu* 'beef' in the topic position.

(9) *Qǐng gěi wǒ niúròu*
please give 1SG beef
'Please give me some beef.'

Besides, even if one accepted extralinguistic plausibility as a factor contributing to the always (partially) given nature of topics, it would be easy to come up with examples of a pragmatically completely unexpected item in topic position. One could very well imagine a customer entering a butcher shop and asking:

(10) *Gébì   de shāngdiàn, tāmen shénme shíhou kāi   mén?*
neighbouring SUB shop   3PL   when   open door
'The shop next door, when do they open?'

In (10), the topic 'the store next door' cannot possibly be construed as "partially expected" in the context of a butcher shop. Or if it can, then nothing can be new information in the strict sense, because everything can somehow be construed as "given" due to the extralinguistic constraint of contextual appropriateness.

This is in fact the point of view defended by Roberts (1996) and Büring (2003) among others (cf. the discussion in Bianchi and Frascarelli 2010). They assume that any assertion in a discourse (except complete "out of the blue" sentences) provides the answer to a possibly implicit "question under discussion", thus accounting for its relevance to the current discourse (cf. Erteschik-Shir 2007 for a similar approach). However, as already pointed out by Reinhart (1982: 33, note 11), such a conception of what counts as old information is "too broad to be of any use at all, since it is hard to imagine what information in a given context would not meet this requirement [of being related to or inferrable from the discourse; WP]."

This brief discussion illustrates that *given* or *old information* is used as a cover term for different types, a state of affairs often glossed over in the studies using this term. It can refer to (i) information which is known or 'old' because mentioned or implicitly present in the previous discourse, to (ii) information which is "expected", "plausible" due to the extralinguistic context, and to (iii) general world knowledge, as in the case of generics as topics (cf. the citation from Li and Thompson 1976 in footnote 2 above). The encompassing and heterogeneous nature of the term *given information* has certainly contributed to the restrictive view of the informational values topics can convey. In the remainder of the chapter, I will therefore use the term *old information* in a narrow sense, *viz* referring to information mentioned or implicitly present in the previous discourse.

6.1.1.3 Conditional clauses as topics

As soon as one goes beyond DP topics and includes for example conditional clauses, whose default position in Chinese is the sentence-external TopP (cf. Gasde and Paul 1996 and references therein), it is even easier to see that no fixed informational value (old vs new information) can be associated with the topic position in Chinese. This contrasts with the situation in English as described by von Fintel (1994: 78) (also cf. Paoli 2007), where the topic position seems to be reserved for elements carrying old information.

   According to von Fintel (1994: 78), in English a conditional clause in sentence-initial position is a topic and carries old information, whereas in sentence-final position a conditional clause is focal and carries new information:

(11)   *What will you do <u>if I give you the money</u> [= new info]?*

(12)   a.   A1   <u>*If you give me the money*</u> *[=old info], I'll buy this house [= new info].*
         b.   A2: #*I'll buy this house, if you give me the money.*

Since a complex sentence with a sentence-<u>initial</u> *if*-clause (12a) has the informational structure 'old – new', it is perfectly acceptable as answer to the question in (11). (12b) however, is not a felicitous answer, because the *if*-clause is presented as requested, hence new information, despite its old information status here. By contrast, the information structure 'old – new' is appropriate in (14a), where it is the *if*-clause that is the requested information and that accordingly must occupy the sentence-final position:

(13)   <u>*Under what conditions*</u> *will you buy this house?*

(14)   a.   A2:   *I'll buy this house [=old info], <u>if you give me the money</u> [= new info].*
         b.   A1: # <u>*If you give me the money*</u>*, I'll buy this house.*

Again, (14b) is infelicitous, because there is a clash between the new information status of the *if*-clause and the position it occupies, the sentence-initial topic position being associated with old information in English.

   If we now try to replicate these question–answer pairs in Chinese, we obtain the result that a conditional clause in topic position can convey old and new information alike. First, a conditional clause occupies its default position, i.e. the topic position, both in the question and the answer, despite its new information status in the former and its old information status in the latter, according to von Fintel's (1994) reasoning:

(15) a. <u>*Rúguǒ wǒ gěi nǐ qián dehuà,*</u>[6]
      if   1SG give 2SG money C(-root)
      nǐ   zuì   xiǎng zuò shénme?
      2SG most want do   what
      'What would you like to do most if I gave you some money?'

      b. <u>*Rúguǒ nǐ gěi wǒ qián dehuà*</u>, *wǒ zuì   xiǎng mǎi yīfu*
      if   2SG give 1SG money C(-root) 1SG most want buy clothes
      'If you gave me some money, I would like to buy clothes.'

Second, when the conditional clause does not occupy its default topic position, but is adjoined as an afterthought to the right of the matrix sentence, it again can occupy this same position both in the question (16a) and the answer (16b). In addition, in the answer the conditional clause can also occur in the topic position (16c):

(16) a. *Nǐ   zuì xiǎng zuò shénme,*
      2SG most want do   what
      <u>*rúguǒ wǒ gěi   nǐ   qián   dehuà?*</u>
      if   1SG give 2SG money C(-root)
      'What would you like to do most, if I gave you some money?'

      b. A1: *Wǒ   zuì xiǎng mǎi yīfu,*
           1SG most want buy clothes
           <u>*rúguǒ nǐ   gěi   wǒ   qián   dehuà*</u>
           if   2SG give 1SG money C(-root)
           'If you gave me some money, I would like to buy clothes.'

      c. A2: <u>*Rúguǒ nǐ   gěi   wǒ   qián   dehuà*</u>
           if   2SG give 1SG money C(-root)
           wǒ zuì   xiǎng mǎi yīfu
           1SG most want buy clothes
           'If you gave me some money, I would like to buy clothes.'

Third, when the conditional clause provides an answer to the question in the preverbal adjunct phrase *zài shénme tiáojiàn xià* 'under what conditions' and hence clearly conveys new info, it again occupies the topic position:

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6 The analysis of *dehuà* as a complementiser in non-root contexts is discussed in chapter 7.

(17) a. *Nǐ [zài shénme tiáojiàn   xià] huì qù měiguó?*
          2SG in   what   condition under will go USA
          'Under what conditions will you go the US?'

   b. A1: <u>*Guójiā gěi   wǒ jiǎngxuéjīn dehuà,*</u> *wǒ huì qù   měiguó*
          state give 1SG scholarship C(-root) 1SG will go   USA
          'If the state gives me a scholarship, I will go to the US.'

   c. A2: #*Wǒ huì qù   měiguó,* <u>*guójiā gěi   wǒ jiǎngxuéjīn dehuà*</u>
          1SG will go USA   state give 1SG scholarship C(-root)
          'I will go to the US, if the state gives me a scholarship.'

Note that in the answer to (17a), the conditional clause *must* occur in the topic position (cf. [17b]), the afterthought position at the end of the sentence being excluded here (cf. [17c]). This shows again that the topic can encode new information.

In fact, an answer with the conditional clause as afterthought is only possible if the question itself has that form, as witnessed by the question–answer pair in (16) above. This is confirmed by the fact that (18b) with the conditional clause in the afterthought position is not a felicitous answer to (18a), where the conditional clause occurs in topic position. Importantly, this generalisation holds irrespectively of the new/old information status of the conditional clause in the afterthought.[7]

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7 A sentence with the conditional clause in sentence-final afterthought position is thus structurally different from the "corresponding" sentence with the conditional clause in sentence-initial position, i.e. in the specifier of TopP. The afterthought status of the sentence-final conditional clause can be neatly shown when the matrix sentence is a yes/no question involving the sentence-final particle *ma*. In this case, the conditional clause must be adjoined to the right of *ma* (a complementiser, cf. chapter 7 below), i.e. to the right of the CP (cf. [i] and [ii]). This clearly contrasts with the sentence where the conditional clause occurs in the topic position and where the entire sentence including the topic (i.e. TopP) is below *ma* (cf. [iii]):

(i)   *[CP [TP Nǐ   huì qù měiguó] ma],* *rúguǒ guójiā gěi nǐ   jiǎngxuéjīn dehuà?*
          2SG will go USA   SFP   if   state give 2SG scholarship C(-root)
      'Will you go to the US, if the state gives you a scholarship?'

(ii) * *[TP Nǐ   huì qù měiguó],* *rúguǒ guójiā gěi nǐ   jiǎngxuéjīn dehuà ma?*
          2SG   will go USA   if   state give 2SG scholarship C(-root) SFP

(iii) *[CP[TopP Rúguǒ guójiā gěi nǐ   jiǎngxuéjīn dehuà] [TP nǐ   huì qù měiguó]] ma]?*
          if   state give 2SG scholarship C(-root)   2SG will go USA   SFP
      'If the state gives you a scholarship, will you go to the US?'

(18) a. <u>*Rúguǒ wǒ gěi nǐ qián dehuà*</u>, *nǐ zuì xiǎng zuò shénme?*
      if   1SG give 2SG money C(-root) 2SG most want do what
      'What would you like to do most if I gave you some money?'

    b. #*Wǒ zuì xiǎng mǎi yīfu* <u>*rúguǒ nǐ gěi wǒ qián dehuà*</u>
      1SG most want buy clothes if   2SG give 1SG money C(-root)
      'I would like to buy clothes, if you gave me the money.'

    c. <u>*Rúguǒ nǐ gěi wǒ qián dehuà*</u>, *wǒ zuì xiǎng mǎi yīfu*
      if   2SG give 1SG money C(-root) 1SG most want buy clothes
      'If you gave me some money, I would like to buy clothes.'
      (cf. [15a], [15b] above)

To summarize, there is no positional asymmetry for a conditional clause in a question/answer pair, but it remains in the same position irrespective of its changed informational value. Accordingly, a conditional clause in topic position can convey old and new information alike, thus supporting the claim that the topic position is not associated with a fixed informational value. In this respect, Chinese clearly differs from English, where the sentence-initial position of adverbial clauses has been associated with old information (cf. Paoli 2007) or presupposed status (cf. Larson and Sawada 2012), and the sentence-final position with new information, respectively. Visibly, the correlations between syntactic position and informational value do not hold cross-linguistically and must be checked for each language.

6.1.1.4 Prepositions indicating topic shift

Let us now turn to the last piece of evidence in favour of the possibility that topics convey new information, *viz* the preposition *zhìyú* 'as for', which exclusively serves to introduce topics carrying new information.

(19) *Nǐ de wèntí, wǒ yǐjīng gěi nǐ jiějué-le;*
      2SG SUB problem 1SG already for 2SG solve-PERF
      <u>*zhìyú*</u> *tā de wèntí, wǒ méiyǒu bànfǎ bāng máng*
      as.for 3SG SUB problem 1SG NEG   method assist help
      'Your problem, I have already solved it for you; as for his problem,
       I have no idea how to help.'   (Charles A. Liu 1977: 205)

The special semantics of the preposition *zhìyú* 'as for' is also mentioned in good grammar manuals such as Lü Shuxiang (2000 [1980]), where *zhìyú* 'as for' is

explicitly described as "introducing a different topic". Lü Shuxiang (2000 [1980]: 684) furthermore emphasizes that in this function *zhìyú* 'as for' cannot be replaced by the preposition *guānyú* 'concerning, about', a fact which clearly reflects the existence of topics with different informational values (new vs old information).[8]

(20)   *Zhè jǐnjǐn shì wǒ gèrén   de yīdiǎn yìjiàn,*
        this only   be 1SG personal SUB a.bit   opinion
        *[{ zhìyú/*guānyú } zhèyàng zuò hǎo bù hǎo]*
           as.for/ concerning so   do good NEG good
        qǐng dàjiā   zài   kǎolü yī xià
        invite everyone again think 1 time
        'This is only my personal opinion; as for whether doing it this way is good or not, I invite everybody to think about it.'
        (Lü Shuxiang 2000 [1980]: 684)

(21)   *Xióng shì záshí   dòngwù, chī ròu chī guǒshí kuàigēn*
        bear   be omnivorous animal eat meat eat fruit   root.tuber
        *[{zhìyú/*guānyú } xióngmāo], zé shì wánquán sùshí   de*
          as for/concerning panda.bear then be completely vegetarian DE
        'Bears are omnivorous animals, they eat meat, they eat fruit and root tuber; (now) as for panda bears, they are completely vegetarian.'
        (Lü Shuxiang 2000 [1980]: 684)

(22)   *Xiǎo Lǐ qù Běijīng, Xiǎo Mǎ qù Shànghǎi, Xiǎo Wáng qù Sūzhōu;*
        Xiao Li go Beijing Xiao Ma go Shanghai Xiao Wang go Suzhou
        *[{zhìyú/*guānyú } Xiǎo Chén] me, tā liú   -zài zhèr*
          as for/ concerning Xiao Chen TOP 3SG remain-be.at here
        'Xiao Li goes to Beijing, Xiao Ma goes to Shanghai, Xiao Wang goes to Suzhou; (now) as for Xiao Chen, he stays here.'

As illustrated by examples (20) – (22), the use of *zhìyú* 'as for' is also felicitous if the topic carries information that is new with respect to the general subject matter in the preceding discourse, i.e. not necessarily with respect to a previous topic only (as is the case in [19]). As pointed out by Charles A. Liu (1977: 205), *zhìyú* 'as for' can never start a conversation, i.e. it cannot introduce a topic "out

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8 According to Smith (1991: 554), *speaking of* in English likewise serves to shift the direction of discussion and to introduce a new topic.

of the blue", but requires a preceding discourse. This constraint is plausible insofar as a topic switch is only possible against the background of already established information. Surprisingly enough, these facts – although observed in the Chinese literature – have not been taken into account when examining topics in Chinese.[9] Even Charles A. Liu (1977) himself sticks to the idea of topic as exclusively encoding old information, notwithstanding his own description of *zhìyú* as 'topic switching', which after all implies a different informational status for the topic "switched to".

Importantly, these findings for Chinese tie in with the analysis of Romance and Germanic languages presented in Bianchi and Frascarelli (2010). Bianchi and Frascarelli (2010) propose a tripartite classification of topics into *contrastive topics, given topics* and *aboutness topics*. While *given topics* resume background information or signal topic continuity, *aboutness topics* are not exclusively associated with old information. On the contrary, aboutness topics often involve the shift towards a *new* topic (hence *aboutness-shift topics*) and in Italian are then marked by a sharp rise in the fundamental frequency (F^0). In the following example taken from the Italian corpus (Bonvino 2006) studied in Frascarelli and Hinterhölzl (2007), a student has been giving her opinion about a self-learning course in a rather general manner before turning to a new topic, i.e. *l'ultima unità* 'the last unit', where the rise in the F^0 contour falls on *unità* (marked by underlining):

(23) *L'ultima <u>unità</u>$_k$* [$_{TP}$ *pro la$_k$ sto   facendo]*
      the.last   unit   it   be.PRES.1SG do.GER
      'The last unit, I'm doing it now.'
      (Bianchi and Frascarelli 2010: 55, [13'])

Note that Italian is a *pro-drop* language and that accordingly the pronominal subject 'I' can remain silent, as is the case in (23). It is the presence of the pronoun *la* referring back to *l'ultima unità* 'the last unit' that indicates that the latter has been moved to the topic position in the periphery above TP.

The relationship postulated by Li and Thompson (1976) between the definition of the topic as *what the sentence is about* and the exclusively old informa-

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9 Shi Dingxu (2000: 386, [5]) – without further explanation – excludes topics introduced by prepositions: "A topic is an *unmarked NP* (or its equivalent) that precedes a clause and is related to a position inside the clause; a topic represents an entity that has been mentioned in the previous discourse and is being discussed again in the current sentence, namely, topic is what the current sentence is set up to add new information to. The clause related to the topic in such a way is the comment." [Emphasis mine, WP].

tion status of the topic is thus incorrect, not only in Chinese, but also in Romance and Germanic languages. In the remainder of this chapter, the term *aboutness topic* is therefore used in the sense of Bianchi and Frascarelli (2010), i.e. as being open with respect to the informational value (old or new information).

6.1.2 Chafe's (1976) definition of the topic as frame

However, even this more articulate view of aboutness topics has its limits, because it is not appropriate for all types of topics.[10] The rather common multiple topic structures in Chinese are a case at hand, where it is far from clear which of the multiple topics should be singled out as the one that indicates what the sentence "is about":[11]

(24)   *Zhōngguó, dà chéngshì, Shànghai, jiāotōng bǐjiào luàn*
         China   big town   Shanghai traffic rather chaotic
         'In China, among the big towns, in Shanghai, the traffic is rather
         chaotic.'

(25)   *[Míngtiān de huìyì   yánqī],   [měi   ge huìyuán],*
          tomorrow SUB meeting postponement   every CL member
         [TP wǒ dōu   tōngzhī-guo le]
              1SG all   inform-EXP SFP
         'As for the postponement of tomorrow's meeting, every member,
          I have informed them.'   (Xu and Liu 1998: 73; [6b])

(26)   *[Zhè jǐ   nián], [pīpànhuì   ], lǎohàn jiàn-duō le*
          this several year   criticism.meeting old.man see-much SFP

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10 The longevity of the idea that a topic can be exhaustively described in terms of "what the sentence is about" is illustrated by the recent special issue of *The Linguistic Review* (vol. 26, nr. 2–3, 2009). Also cf. Huang, Li and Li (2009: 203).
11 Shi Dingxu (2000) does not discuss multiple topic constructions, although they are rather common in Chinese. This is probably due to the fact that at least one of the topics in a multiple topic construction is often a base-generated topic which cannot be derived by extraction from the comment clause, thus challenging Shi's (2000: 386; (5)) stipulation that "a *topic* [...] is *related to a position inside the clause*" [emphasis mine, WP]. For a critical appraisal of Shi Dingxu (2000), cf. Pan and Hu (2002) and Xu Liejiong (2006).

'The last couple of years, criticism meetings, the old man has seen too
    many.'   (Lü Shuxiang 1986: 334)

Note in passing that multiple topic structures again challenge the idea of topics
as exclusively conveying old information. In (24) above, depending on the con-
text, at least the two topics *dà chéngshì* 'big cities' and *Shànghǎi* carry new in-
formation.

    Likewise, topics that are not referential expressions, i.e. adverbs, Quantifier
Phrases, clauses etc. do not indicate "what the sentence is about". For example,
(27) with *bàn-ge xiǎoshí de shíjiān* 'half an hour time' as topic can be the intro-
ductory sentence at the beginning of a talk, where *bàn-ge xiǎoshí de shíjiān* does
not represent "what the sentence is about" and does not convey old informa-
tion, either:

(27)   *Bàn ge xiǎoshí de shíjiān, wǒ zhǐ   néng gěi nǐmen*
         half CL hour   SUB time   1SG only can for 2PL
         jiǎng ge   dàgài
         talk CL   broad.outline
         'In half an hour time, I can only give you a broad outline.'

The same holds for clausal topics already encountered above, which do not
indicate "what the sentence is about", either:

(28)   *Rúguǒ nǐ gěi   wǒ qián   dehuà, wǒ zuì   xiǎng mǎi yīfu*
         if   2SG give 1SG money C(-root) 1SG most want buy clothes
         'If you gave me the money, I would like to buy clothes.'   (= [15b] above)

This type of data, where the aboutness definition fails can, however, be very
well accommodated by Chafe's (1976) definition of the topic as the "frame
within which a sentence holds ... limit[ing] the applicability of the main predica-
tion to a certain restricted domain". [12] Note that this conception of the topic is
neutral with respect to the type of information (old or new) conveyed by the
topic, as can be seen from the passage below citing Chafe's (1976) view on

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12 In fact, Li & Thompson (1976, 1981) do mention Chafe's (1976) definition of topic as frame:
"Another way of talking about 'what the sentence is about' is to say that a topic sets a spatial,
temporal, or individual framework within which the main predication holds." (Li and Thomp-
son 1981: 85). However, they present it as a kind of paraphrase of their own "aboutness" defini-
tion, notwithstanding Chafe's (1976) explicit *caveat* with respect to this definition in the cita-
tion below.

"topics, Chinese style". I cite this passage *in extenso* because it explicitly addresses some problems with the (exclusive) notion of *aboutness topics*:

> The following are typical Mandarin sentences with topics, provided by Li and Thompson:
> (15) Nèixiē shùmù shù-shēn dà
>   those tree   tree-trunk big
> (16) Nèi-ge rén   yáng míng George Zhang
>   that   person foreign name George Zhang
>
> To begin with, it is misleading to use, as some authors do, the standard English translations 'As for those trees, the trunks are big' or 'As for that person, his foreign name is George Zhang' if, as I understand to be the case, *no contrastiveness* need be involved in the Chinese sentences. In fact, Chinese seems to express the information in these cases in a way that does not coincide with anything available in English. ... But what is such a topic? *The examples I have seen do not fit precisely the characterization that a topic is "what the sentence is about",* which I think applies better to English subjects and perhaps to Chinese subjects like *shù-shēn* and *yáng míng* in the above sentences. If one considers, for example, what bigness is predicated of in the first sentence, it is not 'those trees', but rather their trunks. *What the topics appear to do is to limit the applicability of the main predication to a certain restricted domain.* The bigness of trunks applies within the domain of those trees. George Zhang being his foreign name applies within the domain of that person. *Typically, it would seem, the topic sets a spatial, temporal, or individual framework within which the main predication holds.* ... In brief, "real topics" (in topic prominent languages) are not so much "what the sentence is about" as "the frame within which the sentence holds".
>
> <div align="right">(Chafe 1976: 50–51; emphasis mine, WP)</div>

Chafe's approach thus allows for the possibility that the speaker chooses an element carrying either old or new information as topic when setting up the frame for the main predication. It also nicely accommodates multiple topic structures (cf. [24] – [26] above), where each topic *qua* frame provides a restriction for the subsequent part. Last, but not least, Chafe's conception is compatible with the large range of phrases occurring in topic position, including non-referential XPs such as clauses, verbal projections, and adverbs. Note that like DP topics (cf. [2] above), clauses (29), adverbs (30) and Quantifier Phrases (31) can be followed by particles instantiating Top° such as *ne*:

(29)   [CP[TopP[TP *Nǐ yàoshi è   -le*] [Top'[Top° *ne],*
                2SG if   hungry-PERF   TOP
        [TP *jiù   zìjǐ zuò   diǎn chī]]]]*
            then self   make a.bit eat
        'If you are hungry, make yourself something to eat.'
        (Lü Shuxiang 2000 [1980]: 413)

(30)   [_CP_ [_TopP_ *Qíshí* [_Top'_[_Top°_ *ne*] [_TP_ *tā bù lái yě hǎo]]]]*
           actually   TOP   3SG NEG come also good
      'In fact, it's as well that he doesn't come.'
      (Lü Shuxiang 2000 [1980]: 413)

(31)   *Wǒ kěyǐ zhuānxīnde tīng liǎng ge xiǎoshí de kè,*
      1SG can attentively listen 2   CL hour   SUB class
      kěshì [_QP_ *sān ge xiǎoshí] ne , wǒ juéde jiù bù xíng*
      but   3   CL hour   TOP 1SG feel   then NEG possible
      'I can attentively attend a class for two hours, but three hours,
       I think, this is just not possible.'

(32)   [_vP_ *Chī fàn], Zhāngsān hěn huì,*
        eat food Zhangsan very know
      [_vP_ *zuò shì], tā yīdiǎn dōu bù huì*
        do matter 3SG a.bit all   NEG know
      'Zhangsan, he for sure knows how to eat, but he doesn't know at all
       how to work.'
      (slightly changed example from C.–T. James Huang 1982: 164, [93])[13]

The preceding examples also demonstrate once again that topics do not exclusively convey given information.

    To summarize this section, the topic in Chinese has two functions, *viz* conveying an aboutness relation (including the shift towards a new topic) or setting up the frame within which a sentence holds. Importantly, neither of these two functions is associated with a particular informational content (new vs old information), thus challenging the dominant view within Chinese linguistics and beyond that wants to restrict topics to given information only.

6.1.3 The contrastive use of topics

Based on the incorrect assumption that topics exclusively convey old information, contrastively interpreted XPs in topic position have often been misana-

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13 C.-T. James Huang (1982: 164) provides (32) in order to illustrate the status of VP as a maximal, hence moveable projection. The observation that VP preposing is possible only when the VP is the complement of an auxiliary is due to C.-C. Jane Tang (1990: 203, note 22). Translated into the current framework, (32) is an instance of *v*P preposing.

lysed as focus (cf. Krifka 1998, Tsai Wei-tian 1994: 137–139, among others and the special issue on topics in *The Linguistic Review* 26, nr. 2/3 [2009]), thereby increasing the confusion concerning the topic even more:

(33)   *Shànghǎi, wǒ yǐjīng   qù-guo le, kěshì Tiānjīn, wǒ hái   méi qù-guo*
          Shanghai 1SG already go-EXP SFP but   Tianjin 1SG still   NEG go-EXP
          'I have already been to Shanghai, but Tianjin, I have not been there
           yet.'

(34)   *Zhèi   ge xuéshēng, wǒ xǐhuān, nèi   ge, wǒ bù xǐhuān*
          this   CL student   1SG like   that CL 1SG NEG like
          'This student, I like, that one, I don't.'

However, an analysis of the contrasted topics as focus is not borne out by the overall syntax of Chinese (cf. Paul 2002b, 2005b; Victor Junnan Pan 2011a). Any constituent in any position can be assigned a contrastive interpretation in Chinese, as illustrated by the parallel constructions below, where the contrasted phrases are underlined.

(35)   *Wǒ kàn-guo <u>shān</u> ,   dànshi   méi kàn-guo <u>hǎi</u>*
          1SG see-EXP mountain but   NEG see-EXP sea
          'I have seen the mountains, but I have not seen the sea.'

(36)   *<u>Zhāngsān</u> yǐjīng   lái   -le   (kěshì) <u>Lǐsì</u> hái méi lái*
          Zhangsan already come-PERF but   Lisi still NEG come
          'Zhangsan has already come, (but) Lisi hasn't.'

(37)   *Wǒ jīntiān <u>gēn</u>   <u>Zhāngsān</u> qù   kàn diànyǐng, míngtiān   <u>gēn</u>   <u>Lǐsì</u> qù*
          1SG today with Zhangsan go   see movie   tomorrow with Lisi go
          'I go to the movies today with Zhangsan, and tomorrow with Lisi.'

No particular phonological emphasis is needed here; on the contrary, it would make the sentences (35) – (37) less natural.[14] Applied to (34) – (35), this means that the topics receive phonological stress by virtue of being sentence-initial, not because of their being contrasted. In (34) for example, *zhèi* 'this' and *nèi* 'that' are stressed as well as the negation *bù*.

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14   Thanks to Fu Jingqi for this observation.

Consequently, a contrastive interpretation has to be distinguished from focus, because otherwise a proliferation of focus positions would be obtained, coinciding in fact with all the positions available for arguments and adjuncts in general.[15]

Whether a contrastively interpreted topic counts as an instance of old or new information depends largely on the role assigned to the extralinguistic constraint of contextual relevance, which is often interpreted as implying the given information status of all items in an assertion via their belonging to the common ground (the only exception being "out of the blue" sentences, cf. the discussion in section 6.1.1.2 above). For Bianchi and Frascarelli (2010), for example, contrastive topics are typically given, because they are related to a contextually salient set of alternatives; however, their update potential is provided by contrast, not by mere givenness. (Also cf. Erteschik-Shir [2007: 11] for a similar view). As already stated above (cf. section 6.1.1.2), this is not the stand to be adopted here, because – as pointed out by Reinhart (1982: 33, note 11) – such an all-encompassing conception of what counts as old information renders this very notion unoperational.[16] Accordingly, contrastive topics are considered here as another instance of topics conveying new information.

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15 There is a consensus now in general linguistics that contrastivity is a possible feature of both topic and focus, hence independent of either; cf. among others Pereltsvaig (2004) and the special issue on contrast in *Lingua* 120, nr. 6 (2010).

16 The following passage citing Erteschik-Shir's (2007: 11) comments on the Catalan example (i) by Villalba (1998) illustrates the consequences of the view that all elements in discourse must in fact count as given:

(i)   A: *On   va   posar les cosas?*
          where PAST–3   put   the things
          'Where did she put the things?'

      B: *Em   sembla que les libres, els   va   posar al   despatx*
          to-me seems   that the books them-MASC   PAST-3   put   in-the study
          'It seems to me that (s)he put the books in the study.'
          (Glosses adopted from Erteschik-Shir)

According to Erteschik-Shir (2007: 11), "topics derived from hyperthemes are ... *new topics*. ...In order for the question–answer sequence to be acceptable, it must be contextually understood that *the books* belong to the set of things in the question. Introducing this set in the question conjures up all its elements, each of which is then considered to be *given* and can potentially provide a link in the following sentence. A *link* [i.e. an 'address pointer' in a file system in which new information is listed under the address specified by the link; WP] can in this way be both *new* and *given* at the same time. What is *newly* introduced is the particular member of the set in question; what is *given* is the set that includes it." [emphasis mine, WP].

I must admit that I am puzzled by this description, where items can be given and new at the same time.

To conclude this discussion on a possible link between informational content and syntactic position, it is important to point out that there is no dedicated position for elements bearing *new* information, either, as evidenced by the answers to different types of *wh*-questions:

(38)   *Shéi lái -le? Zhāngsān lái -le*
       who come-PERF Zhangsan come-PERF
       'Who has come? Zhangsan has come.'

(39)   *Tā kàn-guo shénme? Ta kàn-guo yī jiàn chēhuò*
       3SG see-EXP what   3SG see-EXP 1 CL accident
       'What has he seen? He has seen an accident.'

(40)   *Mǎlì gēn shéi qù kàn diànyǐng? Mǎlì gēn Lisi qù kàn diànyǐng*
       Mali with who go see movie   Mali with Lisi go see movie
       'With whom does Mary go to the movies? Mary goes to the movies
        with Lisi.'

Since Chinese is a *wh*-in-situ language, the constituent bearing the requested, hence new information in the answer occupies different positions (pre- and postverbal), in accordance with the position of the *wh*-phrase.

This straightforwardly invalidates the claim made by Xu Liejiong (2004: 277) (based on LaPolla 1995) that "the sentence-final position [...] is the default position for informational focus [i.e. new information; WP] in Chinese". Given the numerous counterexamples of the type illustrated in (38) – (40), Xu Liejiong (2004: 298) is forced to relativize his claim as follows: "In Chinese the focused element [i.e. the element bearing new information; WP] should take the default focus position as far as possible. Once it is in this position, stress is not required. Phonological realization is a compensatory device where the expression intended to be focused cannot occur in the default position due to some structural limitation." Note that according to the native speakers consulted, the constituent corresponding to the questioned element in general is *not* stressed, irrespective of its pre- or postverbal position.

6.1.4 Interim summary

The preceding discussion has provided extensive evidence in favour of the claim that the topic is *not* associated with a fixed informational value. On the contrary, the topic can convey both old and new information, as e.g. evidenced

by D-linked *wh*-phrases in topic position, the existence of the preposition *zhìyú* 'as for' signaling an "aboutness shift", and the lack of a positional asymmetry in question – answer pairs for clausal topics such as conditionals.

Importantly, this lack of a specific informational value for the topic position ties in with a general property of Chinese grammar, *viz* the non-existence of an automatic correlation between a given syntactic position and a particular informational content. In other words, Chinese does not have a dedicated position for contrastive or new information, either (*contra* Xu Liejiong 2004, LaPolla 1995 among others).

Furthermore, the topic can not only indicate "what the sentence is about", but it can also set the frame within which the (comment) sentence holds (cf. Chafe 1976). The frame setting function of topics not only allows the accommodation of non-referential topics (e.g. conditional clauses, adverbs etc.), but also accounts for multiple topic structures in Chinese, where the aboutness definition simply fails. Note again that none of these two functions is associated with a particular informational value, given that an *aboutness* topic can also involve the shift towards a new topic, a possibility likewise observed in Romance languages (cf. Bianchi and Frascarelli 2010). As a result, there exists no equivalence between the topic as "what the sentence is about" and topic as old information; instead, these are independent properties which do not always go together (*contra* Li and Thompson 1976 among others).

6.1.5 Topic vs focus

As mentioned in the discussion of contrastive topics (cf. section 6.1.3 above), one has to be careful to distinguish between topic and focus, especially narrow focus, which in many languages involves the left periphery. This brief section evidently can only sketch out their major differences; for extensive discussion cf. Victor Junnan Pan (2014) and Paul and Whitman (to appear).

The crucial test available to tell topic and focus apart is to check whether they are subject to the *Exclusiveness Condition* (cf. Szabolcsi 1981, É. Kiss 1998). Under this condition, asserting that the property denoted by the presupposition also holds of an entity distinct from the focus leads to a contradiction:

(41) a. *It is hypocrisy that I loathe. # And it is stupidity that I loathe, too.*
      b. *It is hypocrisy that I loathe, not stupidity.*

Let us now examine how an *in-situ* topic fares with respect to this condition:

(42) A: *Fǎguó   de   dà   chéngshì,   jiāotōng hěn   luàn*
          France SUB big city   traffic   very chaotic
          'In French big cities, the traffic is chaotic.'

(43) B1: Měiguó de dà chéngshì, jiāotōng yě   hěn luàn
              USA   SUB big city   traffic   also very chaotic
              'In American big cities, the traffic is chaotic as well.'
       B2:#Bù, měiguó de dà chéngshì, jiāotōng hěn luàn
              NEG USA   SUB big city   traffic   very chaotic
              #No, in American big cities, the traffic is chaotic.'

Fǎguó de dà chéngshì 'French big cities' is clearly not a narrow focus, because
an alternative , i.e. 'American big cities' (cf. B1) can be introduced for which the
same situation holds as for the first topic, 'French big cities'. By contrast, the
continuation in B2 is infelicitous, because it wrongly implies the exclusiveness
condition to hold here.

In order to obtain the exclusive reading, Chinese must use a cleft construc-
tion with the sentence-initial copula *shi* 'be' (so-called "bare" *shì*, cf. Paul and
Whitman 2008, to appear):

(44) a. Shì fǎguó   de dà chéngshì jiāotōng hěn   luàn,
              be France SUB big city   traffic   very chaotic
       b. bù shì měiguó de dà chéngshì
              NEG be US   SUB big city
       c. #yě   shì měiguó de dà chéngshì
              also be U.S.   SUB big   city
              'It is in French big cities that the traffic is chaotic, not in American
               big cities/ # also in American big cities.'

As reflected in the English translation, the introduction of an alternative item,
'American big cities', for which the proposition 'the traffic is chaotic" is said to
hold as well (cf. [44c]) is infelicitous, thus demonstrating the focus status of
fǎguó de dà chéngshì 'French big cities'.

The same test can be used to distinguish the topicalization of the object to
the matrix topic position 'O, S V' from a special type of object focus cleft again
obligatorily involving sentence-initial *shì* 'be' (cf. Victor Junnan Pan 2014):

(45) *Nǐ de tàidu,   lǎobǎn bù xǐhuān,*
        2SG SUB attitude boss   NEG like

> *nǐ de yīzhuó, tā yě   bù xǐhuān*
> 2SG SUB clothing 3SG also NEG like
> 'Your attitude, the boss doesn't like, and your way of dressing,
> he doesn't like, either.'

(46) *Shì nǐ de tàidu,   lǎobǎn bù xǐhuān,*
      be 2SG SUB attitude boss   NEG like
      bù shì nǐ de yīzhuó (tā bù xǐhuān)
      NEG be 2SG SUB clothing 3SG NEG like
    #*yě   shì nǐ de yīzhuó (tā bù xǐhuān)*
      also be 2SG SUB clothing 3SG NEG like
      'It is your attitude the boss doesn't like, not your way of dressing/
      # and also your way of dressing.'

The focus cleft construction in (46) is special insofar as it requires a non-episodic predicate such as *xǐhuān* 'like' (cf. Victor Junnan Pan 2014 referring to an observation in Niina Zhang 2002b). With activity predicates, such a cleft construction with a moved object is completely unacceptable.

(47) **Shì Àodàlìyà tā yǐjīng qu-guo jǐ   cì   le*
      be Australia 3SG already go-EXP several time SFP
      (Intended: 'It is Australia he has been to several times already.')

Such a constraint on the nature of the predicate does not hold for object topicalization, which further strenghtens the difference with respect to focus (in addition to the presence/absence of *shì* 'be').

(48) *Àodàlìyà, tā yǐjīng qu-guo jǐ   cì   le*
      Australia 3SG already go-EXP several time SFP
      'Australia, he has been there several times already.'

Furthermore, only the topic, but not the focus is compatible with Top° *ne*:

(49) a. *Fǎguó, dà chéngshì bù wēixiǎn*
         France big city   NEG dangerous
         'In France, big citites are not dangerous.'

     b. *Měiguó ne, dà chéngshì bǐjiào wēixiǎn*
         USA   TOP big city   rather dangerous
         '[But] in the US, big cities are rather dangerous.'

(50) a. *Făguó, dà chéngshì bù wēixiăn*
France big city   NEG dangerous
'In France, big citites are not dangerous.'

  b. *Shì měiguó (*ne) dà chéngshì bǐjiào wēixiăn*
be USA   TOP big city   rather dangerous
'It is in the US that big cities are rather dangerous.'

Notwithstanding the presence of the first clause ([49a] and [50a]) providing the necessary context for a felicitous use of *ne*, *ne* is completely excluded in the focus cleft (cf. [50b]) and only allowed in the topic construction (cf. [49b]).

   As demonstrated above, a focus cleft reading only obtains in the presence of *shì* 'be'. This obligatory presence of *shi* is in turn important for the syntactic analysis of focus cleft with sentence-initial *shì*. In fact, *shì* 'be' is the (negatable) matrix predicate which selects the following clause as its complement; accordingly, the focused constituent is located in the left periphery of the complement clause, not in the periphery of the matrix clause (cf. Paul and Whitman [to appear] for further discussion). As a result, there is no focus cleft projection in the matrix left periphery in Chinese; the only type of focus allowed here is the *lián* 'even' focus to be discussed in section 6.4.1 below.

6.2 The syntactic derivation of the topic: *in situ* and moved

So far the discussion has concentrated on the interpretative aspects of the topic. I now turn to the syntactic side. i.e. the question whether the topic occupies the sentence-initial position as the result of movement from a position within the sentence or whether it is base-generated in that position, i.e. an *in situ* topic. This issue was hotly debated in the past and both "extreme" views were defended, i.e. either all topics are derived by movement (cf. among others Shi Dingxu 2000) or all topics are base-generated (cf. Xu and Langendoen, Xu Liejiong 2006). The general consensus today is that both derivations must be allowed for, i.e. derivation by movement and base-generation (cf. among others Y.–H. Audrey Li 2000, Huang, Li and Li 2009, chapter 6.1), and this is also the position to be adopted here.

6.2.1 *In situ* topics

Let us first turn to base-generated topics, which since Chafe (1976: 50) have been called "Chinese style" topics. In fact, many of the examples provided above precisely involve this kind of topic, where the sentence does not contain any gap from which the topic could have moved from, as witnessed by the ungrammaticality of the corresponding sentences where the topic XP is incorporated into the TP:

(51) a. *[DP Zhè jiàn shì], nǐ jiù fàng xīn ba*   (= [1] above)
           this CL matter 2SG then put heart SFP
           'Concerning this matter, you can put your mind at ease.'
           (Lü Shuxiang 1986: 334)

    b. * *Nǐ jiù fàng xīn [DP zhè jiàn shì] ba*
           2SG then put heart this CL matter SFP

(52) a. *[DP Míngtiān de huìyì], dàjiā dōu tōngzhīdào-le*
           tomorrow SUB meeting everybody all notified -PERF
           'Tomorrow's meeting, everybody has been notified.'

    b. * *Dàjiā dōu tōngzhīdào-le [DP míngtiān de huìyì]*
           everybody all notified -PERF tomorrow SUB meeting

(53) a. *Wǒmen de zhōngwén bān,*
           1PL SUB Chinese class
           shí ge xuéshēng yǐjīng bì yè le
           10 CL student already finish study SFP
           'Our Chinese class, ten students have already graduated.'

    b. * *Shí ge xuéshēng yǐjīng bi yè [DP wǒmen de zhōngwén*
           10 CL student already finish study 1PL SUB Chinese
           bān] le
           class SFP

In a multiple topic sentence of the type illustrated in (54), all topics are base-generated:

(54)   *Zhōngguó, dà chéngshi, Shànghǎi, jiāotōng bǐjiào luàn*
        China big town Shanghai traffic rather chaotic

> 'In China, among the big towns, in Shanghai, the traffic is rather
> chaotic.'   (= [24] above)

Note that this holds in general for "telescoping" multiple topic structures where the leftmost topic denotes a superset with respect to the topic on its right. Given the general scope relations in Mandarin where the leftmost item is structurally higher than, i.e. has scope over, the item(s) to its right (cf. C.-T. James Huang 1982, C.-C. Jane Tang 1990, 2001; Ernst 2002), it follows that the relative order between these topics is fixed:

(55)   * *Dà   chéngshì, zhōngguó, Shànghǎi, jiāotōng bǐjiào   luàn*
         big town   China   Shanghai traffic   rather   chaotic

(55a) is unacceptable because *zhōngguó* 'China' follows, i.e. is in the scope of *dà chéngshì* 'big cities', thus contradicting the 'superset – subset' relation between the two.

There is a special case of base-generated topics such as (56) which at first sight looks like a moved topic with a corresponding gap in the sentence:

(56)   *Lǐsì$_i$, [[e$_i$ chàng gē   de] shēngyīn] hěn hǎotīng*
         Lisi   sing song DE voice   very good
         'Lisi, the voice with which [he$_i$] sings is very good.'
         (Huang, Li and Li 2009: 210, [49a]; their glosses and translation)

Given that the gap, i.e. the empty category *e*, is in the subject position of a relative clause embedded in a DP, (56) is predicted to be unacceptable, because violating Ross' (1967) *Complex NP Constraint* (CNPC), which precisely precludes movement from such a DP (also cf. section 6.2.2. immediately below). The comparison of (56) with (57) demonstrates that the CNPC does hold for Chinese:

(47)   * *Lǐsì$_i$, wǒ hěn xǐhuān [$_{DP}$ [$_{TP}$ e$_i$ chàng gē   de] shēngyīn]*
         Lisi I   very like   sing song DE voice
         (Huang, Li and Li 2009: 210, [49b])

Huang (1984b), adopted in Huang, Li and Li (2009: 210), solves this apparent contradiction by postulating that Chinese allows an empty pronoun, *pro*, in *all* argument positions; hence Chinese – unlike English – does not distinguish between *pro* (in positions assigned Case) and PRO (in Caseless positions such as the subject in infinitivals). The interpretation and distribution of this *pro* is ruled by the *Generalized Control Rule* (GCR), which posits that an empty pro-

noun must be coindexed with the closest nominal (cf. Huang, Li and Li 2009: 209, [48]). Applied to (56) this means that the empty category in the subject position of the relative clause is such a *pro*, which is controlled by, i.e. coindexed with the nearest nominal, here *Lisi* in TopP, giving the reading 'Lisi$_i$, the voice with which he$_i$ sings is very nice'. By contrast, in (57), the nearest nominal for *pro* in the subject position of the relative clause is *wǒ* 'I'; accordingly, *Wǒ hěn xǐhuān* pro *chàng gē de shēngyīn* is interpreted as 'I very much like the voice with which I am singing.' While well-formed in itself, this sentence is infelicitous as a comment on the topic, *Lǐsì*, whence the unacceptability of (57). (Recall that an analysis of (57) as resulting from the extraction of *Lǐsì* is ruled out by the CNPC, so there is no way to derive [57]). Further examples involving a base-generated topic controlling a *pro* in the comment sentence are provided in section 6.2.2 below as backdrop for the discussion of locality contraints on moved topics.

While the literature in general limits itself to DPs when illustrating *in situ* topics, it is important to include adjunct phrases of all types here, i.e. adjunct PPs, PostPs and NPs as well as adverbs and clauses (e.g. conditional clauses discussed in section 6.1.2 above). Recall from section 6.1.2 (examples [29], [30]) above that like DP-topics, adjunct phrases and adverbs (such as *qíshí* 'in fact') can also be followed by Top° *ne*.

(58) [$_{CP}$[$_{TopP}$[$_{PP}$ *Zài túshūguǎn*] [$_{TP}$ *wǒ kěyǐ fùyìn*]] *ma*]?
            in   library   1SG can xerox   SFP
       'Can I make photocopies in the library?'

(59) [$_{TopP}$[$_{PostP}$ *Chúxī*   *yǐqián*][$_{TP}$ *wǒ yào   huí   jiā*]]
            New.Year's eve before   1SG need   return home
       'I need to go home before New Year's Eve.'

(60) [$_{TopP}$[$_{NP}$ *Míngtiān*][$_{TP}$ *tā huì zǒu*]]
            tomorrow   3SG will leave
       'Tomorrow, he will leave.'

(61) [$_{TopP}${ *Jūrán   / xiǎnrán   / qíshí* }
            unexpectedly/ obviously/ in.fact
       [$_{TP}$ *tā bù liǎojiě   wǒmen de qíngkuàng*]]
            3SG NEG understand 1PL   SUB situation
       '{Unexpectedly/obviously/in fact} he does not understand our
        situation.'

(62) [_TopP_[_TP_ pro *dào měiguó liúxué*],
                         go   USA   study.abroad
      [_TP_ *zhèngfǔ   zǎo   guīdìng-le   bànfǎ*]]
           government long.ago set.up -PERF procedure
      '(For) studying abroad in the United States, the government long ago set
       up procedural regulations.'
      (Li and Thompson 1981: 98, [45])

Assuming with C.-C. Jane Tang (2001) that adjuncts are base-generated in the position they occupy, sentences (58) – (62) with an adjunct XP in topic position thus all illustrate *in situ* topics.[17] This has already been demonstrated above for conditional clauses whose default position is Spec,TopP (cf. [15] above). In the case of adjunct NPs and AdPs, the topic position is one of the three available

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17 This position is different from e.g. Rizzi's (1997; 2004, section 8) point of view based on Romance languages, where adjuncts occupy a position in the sentence periphery as the result of movement:

 "[...] preposed adverbs can occupy at least three distinct structural positions in the left periphery. Normally, they occupy a dedicated position [i.e., ModP, W.P.] which is intonationally similar to a topic position, but differs from it in that the adverb position does not require a connection with the previous discourse context [...]. In very special discourse contexts, i.e., when they have been mentioned in the immediately preceding discourse, preposed adverbs can also be moved to a genuine topic position, with the familiar characteristics of ordinary topics (e.g., can precede *wh* operators, etc.). And on top of these two options, adverbial elements can also be moved to the initial focus position [...]; in this case they behave like any other element moved to the left peripheral focus position (contrastive interpetation, uniqueness, etc.; see Rizzi 1997 for discussion)." (Rizzi 2004: 241).

By contrast, the distribution of the different types of adjuncts in Chinese does not seem to warrant a movement analysis for adjuncts in the left periphery.

First, unlike in Italian, VP-level adverbs in Chinese (e.g. *yě* 'also', *xiān* 'first', *yǐjīng* 'already', *gāng* 'just' and manner adverbs) are confined to a sentence (TP)–internal preverbal position and can never occur to the left of the subject. In addition, adjuncts in topic position pattern with DP/NP topics in Chinese and there is thus no need for a dedicated position ModP in the sentence periphery (cf. Paul 2005b). Last, but not least, sentential adverbs in fact comprise two groups: one group, represented by *xiǎnrán* 'obviously, evidently', may occur both to the left and the right of the subject, whereas the other group, represented by *kěxī* 'unfortunately' is limited to the sentence-initial position:

(i)   [_TopP_ {*Xiǎnrán /jūrán* }   [_TP_ *tā* [_TopP_ {*xiǎnrán /jūrán* }   *zhēn tǎoyàn gǒu]]]*
            obviously/unexpectedly 3SG   obviously/unexpectedly really hate   dog
      '{Obviously/unexpectedly} he {obviously/unexpectedly} really hates dogs.'

(ii) [_TopP_ *Kěxī*   [_TP_ *tā (*kěxī)   bù néng lái]]*
            unfortunately 3SG unfortunately NEG can   come
      'Unfortunately, he cannot come.'

positions, in addition to the position below the subject and below auxiliaries. (Note, though, that the latter position is excluded for sentential adverbs.)

(63) *Wǒ {zài túshūguǎn} kěyǐ {zài túshūguǎn} fùyìn ma?*
      1SG in library   can   in library   xerox SFP
      'Can I make photocopies in the library?'

(64) *Wǒ {chúxī   yǐqián} yào { chúxī   yǐqián} huí   jiā*
      1SG New.Year's.Eve before   need New.Year's.Eve before   return home
      'I need to go home before New Year's Eve.'

(65) *Tā {míngtiān} huì   {míngtiān} zǒu*
      3SG tomorrow   will tomorrow leave
      'Tomorrow, he will leave.'

(66) *Tā {jūrán   / xiǎnrán / qíshí } bù liǎojiě*
      3SG unexpectedly/ obviously/in.fact   NEG understand
      wǒmen de qíngkuàng
      1PL   SUB situation
      '{Unexpectedly/obviously/in fact} he does not understand our
       situation.'

Considering the different positions available for these adjuncts as base-generated rather than as landing sites for movement allows a more straightforward account for the distribution of adjuncts, in particular the associated scope differences where an adjunct in topic position has a larger modificational scope than the same adjunct in a TP-internal preverbal position.

The inclusion of adjunct XPs under *in-situ* topics also once again demonstrates that the topic cannot be exhaustively defined as "what the sentence is about" and that it is necessary to take into account the frame-setting function of topics à la Chafe (1976) as well (cf. section 6.1.2 above). This is important insofar as the "aboutness" definition of (base-generated) topics is still the dominant one (cf. among others Huang, Li and Li 2009: 203).

6.2.2 Topics derived by movement

Taking up the arguments discussed in Y.-H. Audrey Li (2000) and in Huang, Li and Li (2009, section 6.1.1), this section discusses the necessity of postulating moved topics in addition to *in situ* topics.

First, if the topic in a structure such as (67a) is derived by movement, the unacceptability of (67a) can be explained as on a par with that of (67b) (cf. Huang, Li and Li 2009: 204–205; [29], [31]; their glosses and translations):

(67)   a. *$[_{TopP}$ *Zhāngsān$_i$* $[_{TP}$ *tā$_i$ bù   rènshì   t$_i$]]*
                 Zhangsan   he   not   know
             *'Zhangsan$_i$, he$_i$ doesn't know.'

       b. *$[_{TP}$ *Tā$_i$ bù   rènshì   Zhāngsān$_i$]*
                 he   not   know   Zhangsan
             *'He$_i$ doesn't know Zhangsan$_i$.'

(67b) is unacceptable under a reading where the subject pronoun *tā* 'he' is coreferential with *Zhangsan*, because referential expressions such as proper names must not be coindexed with a c-commanding noun in an argument position (cf. Condition C of the binding principles in Chomsky 1981).[18] Likewise, the trace left by topicalization (A-bar movement) of *Zhangsan* in (67a) cannot be A-bound by the pronoun *tā* 'he', because as a variable it must be A-free. (67a) as a *Strong crossover* configuration is therefore ruled out. Assuming that *Zhangsan* has moved from the postverbal object position to the topic position and that the interpretation is based on this original position prior to movement (*reconstruction*) thus allows us to straightforwardly account for the impossibility of interpreting *Zhangsan* and *tā* 'he' as coreferential. The same situation is observed in (68), again illustrating a strong crossover configuration:

(68)   **Zhangsan$_i$** $[_{TP}$ *tā$_i$ shuō Lǐsì kànjiàn-le t$_i$]*
           Zhangsan   he say Lisi   see   -LE
       *'Zhangsan$_i$, he$_i$ said that Lisi saw e$_i$.'
           (Huang, Li and Li 2009: 205, [32b]; their glosses and translation)

The interpretation of the pronoun *tā* 'he' as coreferential with *Zhangsan* is excluded in (68) for exactly the same reason as in (69); here the referential expres-

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18 Binding principles (cf. Chomsky 1981):
    A. An anaphor is bound in its governing category.
    B. A pronominal is free in its governing category.
    C. A R(eferential)–expression is free.
For further discussion of these conditions and their implementation in Chinese, cf. Huang, Li and Li (2009, chapter 9).

sion *Zhāngsān* is coindexed with the pronoun *tā* 'he' which c-commands it, a configuration ruled out by binding principle C:

(69)   * *Tā$_i$ shuō [Lǐsì   kànjiàn-le Zhangsan$_i$]*
        he say   Lisi see   -LE Zhangsan
      * 'He$_i$ said that Lisi saw Zhangsan$_i$.'
        (Huang, Li and Li 2009: 205, [33]; their glosses and translation)

(67a) and (68) with a moved topic clearly contrast with (70), where the *in situ* topic *Zhangsan* and the subject *tā* 'he' must be analysed as being coreferential:[19]

(70)   [$_{TopP}$ *Zhangsan$_i$* [$_{TP}$ *tā$_i$ zǒu -le*]]
         Zhangsan   he leave-LE
      'Zhangsan$_i$, he$_i$ left.'
      (Huang, Li and Li 2009: 204, [28a]; their glosses and translation)

A second argument in favour of the existence of moved topics is provided by idiomatic verb-object phrases such as *kāi dāo* 'open knife' = operate on sb.', *kāi wánxiào* 'open joke' = 'make fun of sb.', *chī cù* 'eat vinegar' = 'to be jealous' etc.[20] Given that the idiomatic reading relies on the contiguity of the verb and the object, a structure where the object occupies a topic position must be the result of movement (cf. Huang, Li and Li 2009: 206).

(71)   [$_{TopP}$[$_{DP}$ *Zhè zhǒng wánxiào*]$_i$ [$_{TP}$ *wǒ bù gǎn kāi t$_i$*]]
          this kind joke   1SG NEG dare open
      'This kind of joke, I don't dare to make.'

Third, locality constraints governing movement are another diagnostic for topics derived by movement. Besides the *Complex Noun Phrase Constraint* (CNPC) already discussed above and again illustrated in (72) below, there exist other contraints on movement such as the *Left Branch Condition* (LBC) (cf. [73]) and the *Adjunct Island Constraint* (AIC) (cf. ([74]), subsumed by Huang (1982, chapter 6.4) under a single *Condition on Extraction Domain* (CED) (also cf. Huang, Li and Li 2009: 208):

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19 Huang, Li and Li (2009: 204) state that "the pronoun *tā* 'he' *may* be understood to be core-fential with the topic" [emphasis mine, WP]. However, coreference is obligatory here, because otherwise the comment sentence would not be related to the topic at all.
20 Cf. Paul (1988) for an extensive discussion of the syntax and semantics of idomatic and non-idiomatic verb-object phrases.

(72) *[*TopP* Lǐsì*i* [*TP* wǒ hěn xǐhuān[*DP* [*TP* e*i* chàng gē de] shēngyīn]]]
        Lisi   I   very like   sing song DE voice
     *'Lisi*i*, I like the voice with which e*i* sings.'

(73) *[*TopP* Zhāngsān*i* [*TP* wǒ kànjiàn-le [*NP* e*i* bàba]]]
        Zhangsan   I   see -LE   father
     'Zhangsan*i*, I saw [his*i*] father.'

(74) * [*TopP* Lǐsì*i* [*TP* zhè jiàn shì [*PP* gēn [*TP* e*i* méi lái]] méi yǒu guānxi]
        Lisi   this CL matter with   not come not have relation
     'Lisi*i*, this matter is not related to [his*i*] not having come.'

([72] – [74] are examples [41b], [42], and [43] from Huang, Li and Li 2009: 208
with their glosses and translations; bracketing supplied by me.) (73) illustrates
the LBC which excludes extraction of a modifier XP from an NP, and (74) the AIC
blocking movement from an adjunct.

Apparent counter-examples to the LBC of the type illustrated in (75) where
at first sight the topic seems to have moved from the modifier position within
the NP again involve an empty pronoun, *pro*; in other words, the topic turns out
to be generated *in situ* (cf. section 6.2.1 above):

(75) Zhāngsān*i* [*TP* [*NP* pro*i* bàba] hěn yǒuqián]
     Zhangsan   father very rich
     'Zhangsan*i*, [his*i*] father is rich.
     (Huang, Li and Li 2009: 209, [45])

Since nothing intervenes between *pro* and the topic, *pro* can be controlled by
and coindexed with the base-generated topic, thus ensuring that the sentence
makes a statement concerning the topic and is a felicitous comment.

In order to obtain a complete picture of when to assume movement and
when base-generation of a topic, it is once again necessary to take into account
adjunct Adpositional phrases (AdPs). According to Y.-H. Audrey Li (2000: 3),
PPs in topic position must be the result of movement and cannot be base-
generated, because a *pro* cannot be a PP (cf. Saito 1985) and there exists thus no
configuration where *pro* is controlled by a base-generated topic PP.[21]

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21 "Saito (1985) observes that a *pro* cannot be a PP and therefore a displaced PP must be the
result of movement rather than coindexing with a base-generated *pro*. Chinese topic structures

(76) a. *[Duì   Zhāngsān]ᵢ, wǒ zhīdao tā tᵢ bù zěnme guānxīn*
          to(wards) Zhangsan 1SG know 3SG NEG how   care
          'Zhangsan, I know he doesn't quite care for.'

   b. *[PP Cóng zhè jiā yīnháng], wǒ zhīdao wǒmen kěyǐ tᵢ jièdào*
          from this CL bank   1SG know 1PL   can   borrow
       hěn duō   qián
       very much money
       'From this bank, I know we can borrow a lot of money.'

   c. *[PP Gēn zhè zhǒng lǎoshī], wǒ zhīdào wǒ tᵢ yīdìng xué -bù -hǎo]*
          with this kind teacher 1SG know 1SG   certainly learn-NEG-good
       'With this kind of teacher, I know I certainly will not learn well.'
       (cf. Y.-H. Audrey Li 2000: 2–3, examples [2a] – [2c])

However, this deduction cannot be applied to all cases, because it excludes – without further explanation – the option of base-generating XPs in the topic position *without* any coindexed *pro* in the sentence. Such a derivation is required, though, for cases of "Chinese style topics" ([41] – [43]), multiple "telescoping" topics as (44) (cf. section 6.2.1 above) and for conditional clauses (cf. the discussion of [15] above). Furthermore, in a framework where the distribution of adjuncts in general is obtained not by movement from a single "original" position, but by base-generation in the different (sentence-external and sentence-internal) positions available, there is no other way to account for adjunct AdPs in TopP. Also note the existence of PPs that are confined to the topic position and excluded from the TP-internal position, such as the PPs headed by *guānyú* 'concerning' (cf. Lü Shuxiang 2000 [1980]: 240).

(77) a. *[TopP[PP Guānyú   zhōngcǎoyào] [TP wǒ zhīdao de hěn shǎo]]*
             concerning Chinese.medicine   1SG know DE very little
          'Concerning traditional Chinese medicine, I know very little.'

   b. *[TP Wǒ [PP guānyú   zhōngcǎoyào]]   zhīdao de hěn shǎo]*
          1SG   concerning Chinese.medicine know DE very little

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allow a PP to be a topic. If a PP cannot be base-generated because of the lack of a PP *pro*, the topic PP must be the result of topicalization." (Y.-H. Audrey Li 2000: 2).

This case cannot be accommodated by the movement scenario, either, because the latter crucially presupposes a TP-internal base position from which the PP in question has raised. As a result, the PP must have been base-generated in TopP.

In the same vein, it is important to note the strong preference for PostPs to occur in TopP when their complement is a clause with an overt subject.

(78) a. *[TopP[PostP [TP Tā bān   jiā]   yǐhòu]*
                    3SG move home after
          [TP wǒ jiù   méi shōudào tā de xìn]]
              1SG then NEG receive 3SG SUB letter
          'Since he moved, I haven't had any letters from him.'

      b. *[TP Wǒ [PostP[TP tā bān   jiā] yǐhòu] jiù méi shōudào tā de xìn]*
             1SG   3SG move home after then NEG receive 3SG SUB letter

(79) a. *[TopP[PostP[TP Tā dào zhōngguó] yǐlái]*
                    3SG go   China   since
          [TP wǒmen měitiān   jiàn miàn]]
              1PL   every.day see face
          'Since he has has come to China, we meet every day.'

      b. *[TP Wǒmen [PostP[TP tā dào zhōngguó] yǐlái] měitiān   jiàn miàn]*
             1PL   3SG go China   since every.day see face

This again casts doubt on extraction from a sentence-internal position as the only derivation possibility for topic AdPs.

To conclude, an adjunct AdP in topic position involves an *in situ* topic without any empty pronoun in the TP. This challenges not only Y.-H. Audrey Li's (2000) view, but also the classification of topics by Badan (2007) and by Del Gobbo and Badan (2010), where PPs are likewise automatically derived by movement. More precisely, they are identified as cases of *left dislocation*, an analysis going back to Benincà & Poletto (2004). (Note that neither Y.-H. Audrey Li [2000] nor Del Gobbo and Badan [2010] take into consideration PostPs.).

(80)   *Gěi Zhāngsān, wǒ t_i jì -le   yī fēng xìn*
          to   Zhangsan 1SG   send-PERF 1 CL   letter
          'To Zhangsan, I sent a letter.'
          (Del Gobbo and Badan 2010: 73, [25])

A closer look at the examples in Y.-H. Audrey Li (2000) (cf. [76] above) and Del Gobbo and Badan (2010) reveals that they involve argument PPs. At best then, the correlation between a topic PP and its derivation by movement holds for argument PPs only, but not for adjunct AdPs.[22]

To summarize, topics can be derived in two ways, either by extraction from a position within the sentence or by base-generation; the latter is the only option in the case of conditional clauses as well as adjunct phrases and adverbs.

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22 This is the opposite of the observation made by Ernst (1989), *viz* that argument PPs can *not* be extracted. In fact, upon closer scrutiny, the data situation remains contradictory for argument PPs, insofar as the (un)acceptability of extraction does not seem to be correlated with other factors. One such factor which first comes to mind when examining Y.-H. Audrey Li's (2000) well-formed cases of argument-PP topicalization is their peculiar position when TP-internal. In fact, the PPs headed by *cóng* 'from', *duì* 'towards' and *gēn* 'with' in her examples (cf. [76a] – [76c] above) can never occur in postverbal position, even when selected as argument by the verb, and in that respect differ from argument PPs in the canonical postverbal position. However, as shown in chapter three (footnote 15), an argumental *cóng* PP sometimes also resists topicalization:

(i) (*[PP *Cóng nóngcūn]*) [TP *tā   gāngcái* [PP *cóng   nóngcūn] huílai-le*
          from village   3SG just   from village   return-PERF
      'He has just returned from the village.'

When comparing (i) with the acceptable sentence (ii), it is obvious, though, that the argument vs adjunct status plays a role here; while *huílái* 'return' in (i) c-selects a source PP, *zŏu* 'go' in (ii) does not; instead it c-selects a goal PP (here *wàng nán* 'towards the south'):

(ii) *Yóujú,   {cóng zhèr}* [TP *nǐ   { cóng zhèr} wàng   nán   zŏu]*
      post.office from here   2SG from here   toward south go
      'The post office, from here, you go south.'

Concerning the *gěi*-PP indicating the goal in Del Gobbo and Badan's (2010) example (cf. [80]), it can occur in two TP-internal position, either postverbally or preverbally, and it is therefore difficult to decide from which of these two positions the topicalized *gěi*-PP has raised.

(iii) *Wǒ {gěi Zhāngsān} jì   -le   yī fēng xìn   { gěi Zhāngsān}*
      1SG to Zhangsan send-PERF 1 CL letter to Zhangsan
      'I sent a letter to Zhangsan.'

Given that a goal *gěi*-PP cannot be topicalized when originating from an island (e.g. a complex NP), it is clear, though, that a *gěi*-PP in the topic position must have moved there:

(iv) * [TopP [PP *Gěi Mǎli]* [TP *wǒ rènshi* [DP[TP Øi tPP *dǎ   diànhuà de] nèi ge nánháiri]]]*
              to Mary   1SG know   call phone   SUB that CL boy
      (*'To Mary, I know the boy who called on the phone.')
      (Paul and Whitman 2008: 445, footnote 27)

To summarize, the only positive result obtained here is that adjunct AdPs preceding the subject should indeed be analysed as in situ topics, for they are systematically acceptable here and do not display any of the complications associated with the topicalization of argument PPs.

6.3 Topic vs subject

Given that the definition of topic used here is a syntactic one, with the *topic* indicating an XP in the position to the left of the subject occupying Spec,TopP, it follows that the topic is necessarily different from the subject. This contrasts with a semantico-pragmatic definition where the topic refers to the general theme of discourse, which may or may not coincide with the subject. (cf. among others Krifka 2007 and the special issue on topics in *The Linguistic Review* 26, nr. 2/3 [2009]).[23] Accordingly, in the approach adopted here where topic and subject *qua* positions are distinct, notations often encountered in the literature such as "subject/topic" and terms such as "topical subjects" (meant to refer to subjects encoding old information) are impossible. Evidently, this does not exclude movement of the subject to the topic position (cf. [81] – [83]) nor coreferentiality between a topic and a pronoun in the subject position (cf. [84])

(81) $[_{TopP}[_{DP}$ *Sān ge xuéshēng$]_i$* $[_{TP}$ *wǒ xiǎng$[_{TP}$ t_i shì bù gòu de]]]*
          3   CL student   1SG think   be   NEG enough DE
'Three students, I think are not enough.'
(Huang, Li and Li 2009: 289, [11b])

(82) $[_{TopP}$ *Zhè$_i$* $[_{TP}$ *wǒ yǐwèi* $[_{TP}$ t_i *gèng zhíde shèn sī*]]]*
          this   1SG assume   more worth deep think
'This, I consider it is even more worthwhile to think about thoroughly.'
(Lü Shuxiang 1986: 334)

(83) $[_{TopP}[_{DP}$ *Lǐ xiānshēng$]_i$* $[_{Top'}[_{Top°}$ *ne] $[_{TP}$ t_i rènshi wǒ]]]]*
          Li Mr.   TOP   know 1SG
'Mr. Li, he knows me.'

(84) $[_{TopP}[_{DP}$ *Lǎo Zhāng$]_i$* $[_{Top'}([_{Top°}$ *ne]) $[_{TP}$ $t\bar{a}_i$ kěn bāngzhù rén]]*
          Lao Zhang   TOP   3SG be.willing help   person
'Lao Zhang, he is willing to help people.'[24]
(adapted from Lü Shuxiang 1986: 334)

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23 For example, in the sentence illustrating a topic carrying new information given by Krifka (2007: 31, [40]), the constituent presented as topic in fact turns out to be the subject of the sentence: *[A good friend of mine]$_{Topic}$ [married Britney Spears last year]$_{comment}$*

24 When *ne* is present, it implies prior mentioning of people unwilling to help.

In examples (81) – (83), given the semantic relationship between the XP in topic position and the predicate in the lower TP, the XP originates from the subject position in that lower TP and has raised to TopP. Furthermore, the presence of the particle *ne* realizing the head of TopP in (83) is a clear indication that the extracted subject occurs in the topic position. (84) finally involves a base-generated topic which is coreferential with the pronoun *tā* 's/he' in subject position.

To keep the topic and the subject apart *qua* positions is necessary in order to account for a set of phenomena. First, Chinese being a *wh* in-situ language, the interrogative pronoun *shéi* 'who' is only acceptable in subject position, not in topic position, as evidenced by its incompatibility with *ne*:[25]

(85) a. *[TP Shéi rènshi zhèi ge rén]?*
          who know this CL person
       'Who knows this person?'

    b. *[TopP [TopP Shéi_i ne [TP t_i rènshi zhèi ge rén]]]?*
          who TOP   know this CL person

(85b) is thus on a par with (86b) where *shéi* 'who' questioning the object occurs in the topic position to the left of the subject *tā* 's/he', resulting in the unacceptability of the sentence:

(86) a. *[TP Tā rènshi shéi]?*
          3SG know who
       'Who does she know?'

    b. *[TopP Shei_i [TP tā renshi t_i]]?*
          who   3SG know

---

25 This contrasts with D-linked subject *wh*-phrases, which for some speakers are compatible with *ne* when in the topic position (cf. Victor Junnan Pan [2011a] for further discussion):

(i) *[TopP [DP Nǎ   ge xuéshēng] [Top' [Top° ne][TP hái méi jiāo   xuéfèi]]]?*
         which CL student   TOP° still NEG deliver inscription.fee
     'Which (of the) student(s) hasn't paid the inscription fees yet?'

Recall from section 6.1.1 above that only D-linked *wh*-phrases of the type '*nǎ* classifier NP', i.e. 'which (of the) NP' or '*shénme* N', i.e. 'what N' are allowed in topic position, in contrast to plain *wh*-phrases such as *shéi* 'who', *shénme* 'what' etc.

Second, topic and subject behave differently with respect to relativization; more precisely, only subjects, but not topics can be relativized (cf. Huang, Li and Li 2009: 212–213):

(87)   a.   *Yīwài   fāshēng-le*
            accident happen -PERF
            'An accident happened.'

       b.   *Nèixiē rén   fāshēng-le   yīwài*
            those person happen-PERF accident
            'Those people had an accident.'
            (Huang, Li and Li (2009: 212, [54], [55])

As pointed out by Huang, Li and Li (2009: 212), *fāshēng* 'happen' can be either used as an unaccusative verb and then selects a theme argument (cf. [87a]), or as a transitive verb with an additional experiencer argument (i.e. *nèixiē rén* 'those people' in [87b]). The experiencer can also occur in topic position:

(88)   *[TopP nèixiē rén   [TP yīwài   fāshēng-le]]*
              those person   accident happen-PERF
       '(As for) those people, an accident happened.'
       (Huang, Li and Li 2009: 213, [57])

If one now tries to relativize *nèixiē rén* 'those persons', it emerges that only *nèixiē rén* 'those persons' in subject position can be relativized (cf. [89]), in contrast to *nèixiē rén* 'those persons' in TopP (cf. [90]):

(89)   *[DP [TP eᵢ fāshēng-le   yīwài]   de nèixiē rén]*
                happen-PERF accident SUB those person
       'those people who had an accident'

(90)   **[DP [TP yīwài   fāshēng-le]] de nèixiē rén]*
                accident happen-PERF SUB those person
       ('the people such that an accident happened')
       (Huang, Li and Li 2009: 213, [58], [59])

The third piece of evidence in favour of a clear-cut distinction between subject position and topic position involves PPs. As discussed in chapter 4.3.2 above, PPs are banned from the subject position, in contrast to PostPs (cf. [91] and [92]), while both are acceptable in the topic position (cf. [93] and [94]):

(91)   *[TP {[PostP Wūzi lǐ]/ *[PreP zài wūzi lǐ]} hěn gānjìng]*
               room in /   at room in very clean
          'It is clean in the room.'

(92)   *[TP {[PostP Lúzi qián] /*[PreP zài lúzi qián]} hěn nuǎnhuo*
               stove in.front.of/   at stove in.front.of very warm
          'It is warm in front of the stove.'

(93)   *[TopP[PostP Jǐ   ge yuè   yǐqián][TP tā jiù   qù Shànghǎi] le]*
               several CL month before   3SG then go Shanghai SFP
        'Several months ago, he went to Shanghai.'

(94)   *[CP[TopP[PP Zài túshūguǎn][TP wǒ kěyǐ fùyìn]] ma]*?   (= [48] above)
               in   library   1SG can xerox   SFP
          'Can I make photocopies in the library?'

To summarize, topic and subject *qua* positions are clearly distinct and should therefore not be conflated via notations such as subject/topic etc. (also cf. Bartos 2003). The fact that this notation is widespread, especially in semantico-pragmatic approaches (where "topical" is often used as synonym for "old information") highlights the necessity of making precise in what sense, syntactic or semantic/pragmatic, the term *topic* is used, i.e. referring to a syntactic position left of the subject or rather to the general theme of discourse. Otherwise, studies allegedly examining the same issue will provide different, if not contradictory conclusions, as is in fact the case at present. Given that an XP in the topic position does not exclusively convey old information, the possibility of misunderstandings and confusion created by a syntactic vs a semantico-pragmatic definition of the term topic increases even more.

6.4 The sentence-internal topic and the cartographic approach[26]

At first sight, to postulate a topic position to the right of the subject, i.e. *within* the sentence (cf. [95]), seems contradictory with the positional definition applied so far which situates the topic in Spec,TopP to the left of the subject.

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26 This section is based on Paul (2002b, 2005b).

(95) *Tā [bái mǐ   diéyǒng   ] yóu -le ge dìyī*
      3SG 100 meter butterfly.stroke swim-PERF CL first
      'He won the first place in the 100 meters butterfly.'
      (Tan Jingchun 1997: 96)

It makes, however, sense within the so-called cartographic approach to the sentence periphery initiated by Rizzi (1997) and further developed by, among others, Belletti (2004), Benincà and Poletto (2004), Rizzi (2004).[27] In this approach, the left periphery is "split up", i.e. divided into numerous subprojections, among them topic and focus projections, each of which is associated with a specific interpretation. The *split CP* thus obtained contrasts with the former assumption of a single CP projection above the sentence (TP) hosting fronted *wh*-phrases. Importantly, as first shown by Belletti (2004), the hierarchy of projections constituting the left periphery above the subject can also be found in the periphery below the subject. This is confirmed by Chinese; the hierarchy observed in the left periphery where the topic projection is always higher than, i.e. precedes the 'even' focus projection (cf. [96]) also holds for the sentence-internal periphery above the *v*P (cf. [97]), i.e. above negation and auxiliaries (cf. Paul 2002, 2005b).[28] (Recall from section 6.1.5 above that in Chinese only the *lián* 'even' focus is allowed in the left periphery of the matrix clause, focus clefts being confined to TP; cf. Paul and Whitman [2008] and references therein).

(96) a. [TopP *Qīmò   kǎoshì* [FocP *lián liùshífēn* [TP *tā dōu méi nádào*]]]
          term.end exam   even 60   point 3SG all NEG obtain
          'In the final exam, he didn't even obtain sixty points.'
          (slightly changed example from Lu Peng 2003: 223)

      b. *[FocP *Lián liùshí fēn* [TopP *qīmò   kǎoshì* [TP *tā dōu méi nádào*]]]
          even 60   point   term.end exam   3SG all NEG obtain

(97) a. [TP *Tā* [int.TopP *qīmò   kǎoshì* [FocP *lián liùshífēn   dōu* [vP *méi nádào*]]]]
          3SG   term.end exam   even 60 point all   NEG obtain
          'He didn't even obtain 60 points in the final exam.'

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27 For a good introduction into the basic tenets of the cartographic approach, cf. Cinque and Rizzi (2008).

28 Note, though, that in Chinese the sentence-internal periphery is located *above* the *v*P, i.e. above negation and auxiliaries, whereas the sentence-internal periphery observed for Italian is *v*P-internal, i.e. *below* negation.

b. * *[TP Tā [FocP lián liùshí fēn [int.TopP qīmò kǎoshì*
      3SG   even 60   point   term.end exam
[vP dōu méi nádào]]]]
      all   NEG obtain
(slightly changed example from Lu Peng 2003: 223)

Both (96b) and (97b) are unacceptable, because the only possible order 'TopP > *even* focus' (cf. [96a], [97a]) is not respected, irrespective of whether this involves the TP-external or the TP-internal left periphery.[29]

A syntactic definition of the sentence-internal topic can thus be maintained: it occupies a position below the subject and above the verbal projection (including negation and auxiliaries) and is always higher than the *lián* 'even' focus.'

6.4.1 Sentence-internal topic vs sentence-internal *lián* 'even' focus

In contrast to the still widespread assumption in the literature, the sentence-internal topic is *not* a focus (*contra* Ernst & Wang 1995; Shyu 1995, 2001; Tsai Wei-tian 1994, 2000; Niina Ning Zhang 1997, 2000; Huang, Li and Li 2009: 201,

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29 The hierarchy 'TopP > 'even' FocP' also holds in the case of multiple topics, i.e. the multiple topics must be adjacent to each other, and the 'even' FocP can only occur below the last topic:

(i) *[TopP Qīmò kǎoshì[TopP yīngyǔ[FocP lián liùshí fēn [TP tā dōu méi nádào]]]]*
    term.end exam   English   even   60   point   3SG all NEG obtain
'In the final exam, for English, he didn't even obtain sixty points.'
(slightly changed example from Lu Peng 2003: 223)

(ii) * *[TopP Qīmò kǎoshì[FocP lián liùshí fēn [TopP yīngyǔ [TP tā dōu méi nádào]]]]*
    term.end exam   even 60   point   English   3SG all NEG obtain

Chinese is thus different from Italian where according to Rizzi (1997, 2004), an additional topic projection is available *below* the focus projection. Interestingly, Benincà and Poletto (2004) contest this point and argue that what has been identified as topic by Rizzi (1997, 2004) turns out to be a focus-related projection as well. As a result, topic related projections and focus related projections are not interspersed as in Rizzi's proposal, but form two distinct blocks whose relative order is rigid: Topic field > Focus field. This makes more sense for Chinese, but interestingly also for German. Grohmann (2006) argues that only a topicalizable XP may appear between two *wh* phrases, because the latter – being in a certain sense D-linked – occupy Spec, TopP themselves. In other words, in German as well, the topic-related projections need to be contiguous and must not be disrupted by an "extraneous" projection such as FocP. Haegeman (2012, chapter 1) likewise observes a ban on "lower" topics in English, i.e. on topic projections dominated by the focus projection.

among others) nor obligatorily interpreted contrastively (*contra* among others Tsai Wei-tian 1994, Huang, Li and Li 2009: 202).[30]

The misanalysis as focus is probably based on a confusion with the *lián* 'even' focus, given the well-known fact that *lián* preceding the focused item is optional, while the presence of the adverb *dōu* 'all' or *yě* 'also' is obligatory:[31]

(98)   [TP *Tā (lián) liùshí fēn   *(dou/yě)[vP méi   nádào]]*
         3SG even 60   point all/also   NEG obtain
       'He didn't even obtain sixty points.'

However, this confusion can be easily avoided. First, as already mentioned, the adverb *dōu* 'all' or *yě* 'also' is obligatory for the *lián* 'even' focus. Second, as we have just seen, the internal topic can *co-occur* with a *lián* 'even' focus (cf. [97a]), a fact completely overlooked by the proponents of the focus analysis; since only one focus per proposition is allowed, the internal topic can simply not be another focus. Third, the interpretation of internal topics is clearly not one of focus; on the contrary, the topic here sets the frame for the main predication, as illustrated in (97a) above and the examples below:

(99)   *Nǐ zhōngyào   yǐqián yòng-guo ma ?*
       2SG Chinese.medicine before use -EXP SFP
       'Have you ever taken Chinese medicine before?'

(100) *Nǐ de xuéshēng gǒuròu   gǎn bù gǎn chī?*
       2SG SUB student   dog.meat dare NEG dare eat
       'Do your students dare to eat dog meat?'

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30 Qu Yanfeng (1995: 169) is an exception confirming the rule, analysing what he calls the *shifted object* as topic, not as focus. Note, though, that he does not address the differences between this sentence-internal topic and the sentence-external topic. Similarly, Xu Liejiong (2006: 161) shows that the internal topic has to be distinguished from narrow focus, but in the end does not commit himself to a precise analysis. Note that his demonstration must be used with caution, because the TP-internal focus cleft (i) he contrasts the TP-internal topic (ii) with is ungrammatical in Mandarin Chinese, contrary to his presenting it as grammatical:

(i) * *Tā shì pútáojiǔ bù hē*   (ii) *Tā pútáojiǔ bù hē*
    he be   wine   NEG drink   he wine   NEG drink
    (Intended: 'It is wine that he doesn't drink.')   'He doesn't drink wine.'
    (cf. Xu Liejiong [2006: 160–161; his examples [78a] and [80a])

31 The categorial status of *lián* 'even' and hence the precise syntactic analysis of the *lián* 'even' focus is still controversial. For different attempts, cf. among others Paris (1979b, 1994), Shyu Shu-ing (1995, 2001), Paul (2005b), Badan (2007), Badan and Del Gobbo (2010).

(101) *Wǒ yīfu   xǐ   -le , dì   tuō -le,   wǎn   shuā-le ,*
      1SG clothing wash-PERF floor wipe-PERF bowl scrub-PERF
      chuáng yě   zhěnglǐ   -le
      bed   also put.in.order-PERF
      'I did the laundry, wiped the floor, washed the bowls and also made the
      bed.'   (Zhu and Xiao 1999: 113)

The list reading obtained for the topics in (101) is the exact opposite of the se-
mantics associated with focus, i.e. the singling out of a particular item. Like-
wise, in the yes/no questions (99) and (100), no focus on a given constituent can
be discerned. These examples also invalidate the allegedly obligatory contras-
tive reading for internal topics postulated by Tsai Wei-tian (1994: 138).[32]
    The possibility of either merging the internal topic *in situ* (cf. [95] and [97a]
above) or deriving it by movement from the postverbal object position as in the
preceding examples (99) – (101) provides another argument in favour of its topic
status, these two derivation possibilities likewise existing for the TP-external
topic.[33] As demonstrated below, unlike a moved TP-internal topic, a TP-internal
in situ topic cannot occupy a position elsewhere in the sentence, *viz* the post-
verbal position:

(102) *Tā [bái mǐ   diéyǒng] yóu -le   ge dìyī (*[bái mǐ   diéyǒng])*
      3SG   100 meter butterfly swim-PERF CL first   100 meter butterfly
      'He won the first place in the 100 meters butterfly.'   (cf. [95] above)

(103) *Tā[nèi   jiàn shì] hái méi zuò   juédìng (*[nèi   jiàn shì])   ne*
      3SG that CL matter yet NEG make decision that CL matter SFP
      'He has not yet come to a decision concerning that matter.'
      (Fu Jingqi 1994: [29])

The internal topic in (102) and (103) must be base-generated, because there is no
lower position within TP it could have moved from.

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32 Naturally, this does not exclude a contrastive interpretation for internal topics in parallel
constructions, given that this possibility exists for any constituent in any position (cf. the
discussion in section 6.1.3 above):
(i) *Wǒ Shànghǎi yě   dào-guo, Tiānjin yě   dào-guo*   (Wu Weizhang 1995:531)
    1SG Shanghai also go -EXP Tianjin also go -EXP
    'I have also been to Shanghai, and to Tianjin, too.'
33 In the Chinese linguistics literature a moved internal topic as in (99) – (101) is referred to as
preposed object.

Another property TP-internal topics share with TP-external topics is the possibility of multiple topics:[34]

(104) a. *[TopP Qīmò   kǎoshì [TopP yīngyǔ [TP tā kǎo   -le   ge bāshífēn]]]*
           term.end exam   English 3SG pass.exam-PERF CL 80   point
           'In the final exam, for English, he obtained eighty points.'

   b. *[TP Tā [int.TopP qīmò   kǎoshì [int.TopP yīngyǔ*
          3SG   term.end exam   English
          [AspP kǎo   -le   ge bāshí fēn]]]]
              pass.exam-PERF CL 80   point
          'In the final exam, for English, he obtained eighty points.'

   c. *[TopP Qīmò   kǎoshì [TP tā [int.TopP yīngyǔ*
          term.end exam   3SG   English
          [AspP kǎo   -le   ge bāshí fēn]]]]
              pass.exam-PERF CL 80   point
          'In the final exam, for English, he obtained eighty points.'

(105) a. *[TopP [Bái mǐ   diéyǒng]   [TopP [rúguǒ yóu   ge dìyī]*
           100 meter butterfly.stroke   if   swim CL first
           [TP tā jiù   huì fēicháng gāoxìng]]]
              3SG then will extremely happy

   b. *Tā [int.TopP bái mǐ   diéyǒng   ][int.TopP [rúguǒ yóu   ge dìyī]*
          3SG   100 meter butterfly.stroke   if   swim CL first
          jiù   huì fēicháng gāoxìng
          then will extremely happy
          'If he wins the first place in the 100 meters butterfly, he will
           be extremely happy.'

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34 Thanks to the reviewer for pointing this out to me. The acceptability of (104b) thus contrasts with similar examples marked as ungrammatical by Fan Jiyan (1984: 31) and discussed in Paul (2002b: 704); internal multiple topics seem after all more constrained than external ones:

(i) *Wǒmen [nán-pāi   [yájun]   hái kěnéng nádào
      1PL   man-volleyball 2nd.place still possibly obtain
      (Intended: 'Perhaps we can still get the second place in the men's volleyball.')

While in (104), the topics are both NPs, in (105), we have a combination of an NP topic and an in situ clausal topic. Note in passing that the external and internal topic can co-occur in the same sentence (cf. [104c]).

Finally, like the external TopP (cf. the discussion of examples [4] and [5] in section 6.1.1.1 above), the internal TopP can also host a D-linked *wh*-phrase:

(106)   a.   *[TP Nǐ [nǎ   jiàn yīfu]   yǐjīng   shì-guo] le?*
              2SG   which CL   dress already try-EXP SFP
              'Which (of the) dress(es) have you already tried on?'

        b.   *Tā [nǎ   jiàn shì]   hái méi zuò   juédìng   ne?*
              3SG which CL   matter yet NEG make decision SFP
              'Concerning which matter has he not come to a decision yet?'

Not that the D-linked *wh*-phrase can question either an *in-situ* internal topic (cf. [106b]) or a moved internal topic (cf. [106a].

6.4.2 Sentence-internal topic vs sentence-external topic

While so far I have concentrated on the properties shared by the external and the internal topic, i.e. their position above the *lián* 'even' FocP, the availability of both movement and base-generation and the possibility of hosting D-linked *wh*-phrases, there also exist differences.

First, the internal topic does not indicate an 'aboutness' relation, but sets the frame within which the main predication holds. This is particularly neat in the cases of *in situ* internal topics just cited above ([102], [103], [104b]).

Second, complement clauses are banned from the internal topic position cf. ([107b]), while they are perfectly acceptable in the external topic position (cf. [108]): [35]

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35 This ban on complement clauses as internal topics was confirmed by the native speakers consulted. The example provided by the reviewer as counterevidence (cf. [i]) turns out to involve an 'even' focus without *lián* (optionally) preceding the focalized phrase; accordingly, without *dou* the sentence is unacceptable

(i)   *Tāmen nàxiē rén,   [wǒmen jǐ   diǎnzhōng kāi   huì]   *(dōu) wàng-le*
       3PL   those person 1PL   how.many o'clock hold meeting all   forget-PERF
       'Those persons even forgot at what time we hold our meeting.'

(107) a. *Tā wàng-le   [wǒmen jǐ   diǎnzhōng kāi huì]*
        3SG forget-PERF 1PL   how.many o'clock   hold meeting
        'He forgot at what time we hold our meeting.'

    b. **[_{TP} Tā [wǒmen jǐ   diǎnzhōng kāi huì]   wàng-le]*
          3SG 1PL   how.many o'clock   hold meeting forget-PERF

(108) *[_{TopP} [Wǒmen jǐ   diǎnzhōng kāi huì   ] [_{TP} tā   wàng-le]];*
          1PL   how.many o'clock   hold meeting 3SG forget-PERF

    [_{TopP} [wǒmen jǐ   diǎnzhōng chī fàn] [_{TP} tā   méi wàng]]
          1PL   how.many o'clock   eat meal 3SG NEG forget
    'He forgot at what time we hold our meeting, , but he didn't forget
    at what time we eat.'

These differences between the external and the internal topic cannot be described along the lines of a contrast between "discourse topic" (i.e. external topic) and "focus topic" (i.e. internal topic) (cf. Tsai Wei-tian 1994: 138–141), nor in terms of an obligatory contrastive or focus interpretation for the internal topic, as claimed by Huang, Li and Li (2009: 201).

    Finally, unlike A-bar movement to the external TopP (cf. [109]), A-movement to the internal TopP is clause-bound (cf. Qu Yanfeng 1994: 90–91); accordingly, in (110a) the object DP cannot be extracted to the internal TopP of the matrix clause, but can only move within the complement clause (cf. [110b]):

(109) [Zhè běn shū]_i wǒ rènwéi [_{TP} tā yǐjīng kàn-wán -le t_i]
      this CL book 1SG think   3SG already see-finish-PERF
    'This book, I think that he has already finished reading [it].'

(110) a. *Wǒ [zhè běn shū]_i rènwéi [_{TP} tā yǐjīng   kàn-wán -le t_i]
        1SG this CL   book think   3SG already see-finish-PERF

    b. Wǒ rènwéi [_{TP} tā [zhè běn shū]_i yǐjīng kàn-wán -le t_i]
       1SG think   3SG this CL book already see-finish-PERF
    'I think that he has already finished reading this book.'

6.4.3 SOV: Sentence-internal topic vs double topicalization

Some proposals analyse every sequence SOV as a double topicalization where both the subject and the object have been extracted: [$_{TopP}$ S$_i$ [$_{TopP}$ O$_j$ [$_{TP}$ t$_i$ [$_{vP}$.V t$_j$.]]]], thus resulting in the superficially identical sequence SOV (cf. among others Lin Jo-wang 1992, Bartos 2003). While evidently cases of double topicalization exist (cf. [111]), they must be distinguished from sentences with an internal topic.[36]

(111) *[$_{TopP}$ [$_{DP}$ Xiǎo Lǐ]$_i$ [$_{TopP}$ [$_{DP}$ zhè zhǒng péngyou]$_j$*
          Xiao Li   this kind friend
       [$_{TP}$ t$_i$ yīnggāi duō jiāo t$_j$ yīxiē]]]
          should much link   somewhat
       'Xiao Li should more often make this kind of friends.'
       (slightly changed example from C.-C. Jane Tang 1990: 168)

First of all, a double topicalization analysis cannot apply to those cases where the internal topic cannot be derived by movement, but must be generated *in situ* (cf. [102] and [103] above).

Second, since Chinese is a *wh*-in situ language, the subject in a sentence with an internal topic can be questioned by *shéi* 'who', in contrast to the extracted subject in a double topicalization structure. The acceptability of *shéi* in the sequence 'SOV' can therefore serve as a diagnostic to show that everything to its right must likewise be TP-internal:

(112) a. *[$_{TP}$ Shéi[$_{int.TopP}$ [zhè zhǒng zhōngyào]   [$_{AspP}$ yǐjīng yòng-guo]]] le?*
              who   this kind   Chinese.medicine already use -EXP SFP
           'Who has already used this kind of Chinese medicine before?'

       b. *[$_{TP}$ Shéi [$_{int.TopP}$ [bái mǐ   diéyǒng] [$_{AspP}$ yóu -le ge dìyī]]]?*
              who   100 meter butterfly   swim-PERF CL first
           'Who won the first place in the 100 meters butterfly?'

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36 Tsai Wei-tien (1994: 138) as well as Ernst and Wang (1995) likewise argue against the analysis of object preposing sentences as double topicalisation structures. However, their arguments are based on the false assumption that object preposing is a case of focalization and therefore different from the arguments provided here.

SOV sentences with the object in the internal TopP thus contrast with cases of double topicalization, where the extracted subject in the first TP-external TopP cannot be questioned by *shéi* 'who':

(113)   *[*TopP* [*DP* *Shéi*]*i* [*TopP*[*DP* *zheixie xuéshēng*]*j*, [*TP* *ti* *qǐnglái-le* *tj*]
             who   these   student   invite -PERF
      (Intended: 'Who had invited these students?')

Whether SOV sequences with a [+human] object DP are automatically to be analysed as instances of double topicalization, as claimed by John Y.-Y. Hou (1979) who posits inanimacy as condition for the (moved) internal topic, is still controversial. This is due to the partially contradictory judgements native speakers give for fronted [+human] object DPs, as illustrated by sentences (114) and (115) below.

    Starting with sentence (114a) (due to Thomas Hun-tak Lee, p.c.), it is accepted by some speakers, and rejected by others (hence marked by #). In addition, the native speakers accepting it further divide into two groups with respect to the *shéi*-question test; some accept (114b), while others clearly reject it, thus indicating that they analyse (114a) as involving double topicalization, not as a TP with the object DP in the internal topic position:

(114)   a. #*[Lǐ lǎoshī [zhèi ge xuéshēng] fá   -le]]*
        Li teacher this CL student   punish-PERF
       [nèi ge xuésheng] hai méi fá   ]]
        that CL student   still NEG punish
        'Teacher Li has punished this student, but he has not yet punished
        that student.'

      b. *#Shéi [zhèi ge xuéshēng] fá   -le , [nèi ge] hai méi fá]]?*
        who   this CL student   punish-PERF that CL still NEG punish
        (Intended: 'Who has punished this student and has not yet punished
        that one?')

By contrast, (115a) and the corresponding sentence (115b) with *shéi* 'who' are largely accepted. (For some speakers, *dàoshì* 'actually' must be absent in [115b].)

(115)   a.   *Wǒ [Lǐ lǎoshī] méi jiàndào,[Wáng lǎoshī] dǎoshì   jiàndào-le*
          1SG Li teacher NEG see   Wang teacher actually see   -PERF
          'I have not seen teacher Li, (but) teacher Wang, I actually have seen.'

b. Shéi *[Lǐ lǎoshī] méi jiàndào,[Wáng lǎoshī] jiàndào-le ?*
    who   Li teacher NEG see   Wang teacher see -PERF
    'Who has not seen teacher Li, (but) has seen teacher Wang?'

This short discussion shows that John Y.-Y. Hou's (1979) overall ban on [+human] DPs as internal topics is too strong. However, two other observations made by him hold, *viz* the unacceptability of personal pronouns in the TP-internal topic position (cf. [116]), and the obligatory parsing of the sequence '[proper name] [proper name] VP' as 'Topic, S VP' (cf. [117]):

(116)   * $[_{TP}$ *Wǒ de péngyou* $[_{inTopP}$ *tā* $[_{vP}$ *rènshì]]]* [37]
          1SG SUB friend   3SG   know
        (Intended meaning: 'My friends know him.')

(117) $[_{TopP}$ *Lǐsì* $[_{TP}$ *Zhāngsān mà -le]]*   (Wang Jing 1996: 99, [6])
        Lisi   Zhangsan scold-PERF
    'Lisi, Zhangsan scolded him.'
    [Excluded: 'Lisi scolded Zhangsan.']

Movement to the TP-internal TopP is thus much more constrained than movement to the TP-external TopP. As a result, the structure with a moved TP-internal object DP $[_{TP}$ S O_i V t_i] must be distinguished from the superficially identical SOV structure resulting from the topicalization of both the subject and the object $[_{TopP}$ S_i $[_{TopP}$ O_j $[_{TP}$ t_i $[_{vP}.$V $t_j.]]]]$.

6.4.4 Interim summary

The preceding sections have provided ample evidence in favour of a sentence-internal topic projection, in addition to the sentence-external topic projection left of the subject. The possible co-occurrence of the sentence-internal topic with the *lián* 'even' focus is one of several arguments against its still widespread

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37 When analysed as $[_{TopP}$ *[Wǒ de péngyou]* $[_{TP}$ *tā rènshì]]* 'My friends, he knows (them)', i.e. with *wǒ de péngyou* 'my friends' as topic and *tā* 'he' as subject, (116) is acceptable. In other words, when it is possible to interpret the second DP in a sequence 'DP DP VP' as the subject of the sentence (which is automatically the case for a personal pronoun and also the preferred case for a [+human] DP), the parsing 'Topic$_i$, subject V t_i' is chosen. This observation was made by C.-T. James Huang in his MA thesis (Huang, p.c.; also cf. Li Linding 1986, Xu Shu 1988), but so far no explanation in more formal terms has been proposed.

analysis as focus (cf. Ernst and Wang 1995, Tsai Wei-tian 1994, Shyu 1995, Huang, Li and Li 2009, among others). Importantly, the strict ordering observed below the subject: TopP > *lián* 'even' FocP reflects the ordering valid in the periphery above the subject; in this respect, Chinese is on a par with other languages whose peripheries above and below the subject display the same hierarchies (cf. Belletti 2004 among others). Like the external topic, the internal topic can be derived in two ways, *in situ* or by movement. However, unlike the external topic, the internal topic does not convey an aboutness relation, but sets the frame for the main predication. The internal TopP cannot host (moved) complement clauses, either. Finally, the acceptability of [+human] DPs in the internal TopP is subject to a number of constraints, which are not yet fully understood.

6.5 Conclusion

This chapter has demonstrated that the topic is not associated with a fixed informational value. It can convey both old *and* new information, a result tying in with similar observations made for Italian. The topic has two functions: it indicates an 'aboutness' relation or sets the frame for the main predication; this frame-setting function is particularly visible in – though not restricted to – the case of non-referential topics such as Quantifier Phrases, adjunct phrases and conditional clauses. Following the general consensus in the literature, two types of derivation are postulated for topics, *viz* movement and generation *in situ*. The latter is the only possibility for adjuncts, both phrasal (NPs, AdPs, clauses) and non-phrasal (i.e. sentence-level adverbs), a fact often neglected in the literature.

The impossibility of assigning a uniform interpretation to the topic in Chinese suggests that no particular semantic features are associated with the topic position, except for the general property of indicating an aboutness relation or setting the frame. Instead, the interpretation of a topic results from the interaction of the syntactic and semantic properties of the topic XP itself (including its argument or adjunct status), the properties of the predicate inside the comment sentence (TP) as well as the default values associated with the topic position i.e., the frame or aboutness function and the unavailability of a focus interpretation. Adjuncts, for example, may only function as a frame-setting topic, not as an aboutness topic, irrespective of their relative position within the topic domain.

In addition to the sentence-*external* topic position, Chinese also has a sentence-*internal* topic position to the right of the subject, which in the literature

has long been misanalysed as focus. Both the sentence-external and sentence-internal TopP must always precede the *lián* 'even' focus projection, as predicted by the cartographic approach to the sentence periphery initiated by Rizzi (1997) and observed for other languages as well.

Notwithstanding this point of convergence, the cartographic approach does not seem suitable as a general framework to capture the overall ordering relations observed in the sentence periphery in Chinese. One immediate point of divergence with Rizzi's (1997, 2004) hierarchy of projections based on Italian is the non-existence of another TopP below the *lián* 'even' FocP in Chinese, both in the periphery above and below the subject. More precisely, Chinese has a contiguous domain consisting of one or several topics, where topics obligatorily precede the *lián* 'even' FocP and are barred from a position below that FocP.

Even if one leaves this point aside and concentrates on the relative ordering among multiple topics within the topic domain itself, it is evident that the central claim of the cartographic approach is not borne out by the Chinese data, *viz* the division of the sentence periphery into a rigid hierarchy of subprojections, each of which is associated with a precise semantics. For example, in (118), the temporal adjunct phrase *zhè jǐ nián* 'the last couple of years', can precede or follow the (moved) topic DP *pīpànhuì* 'criticism meeting'.

(118) a. *Zhè jǐ nián, pīpànhuì, lǎohàn jiàn-duō le*
      this several year criticism.meeting old.man see-much SFP
      'The last couple of years, criticism meetings, the old man has seen
      too many.'

    b. *Pīpànhuì , zhè jǐ nián, lǎohàn jiàn-duō le*
      criticism.meeting this several year old.man see-much SFP
      'Criticism meetings, the last couple of years, the old man has seen
      too many.'
      (Lü Shuxiang 1986: 334)

This contrasts with the situation in Italian where only one order is possible:

(119) a. *Mario, nel 1999, gli hanno dato il premio Nobel*
      Mario in-the 1999 to-him have given the prize Nobel
      'Mario, in 1999, they gave him the Nobel prize.'

    b.??Nel 1999, Mario, gli hanno dato il premio Nobel
      in-the 1999 Mario to-him have given the prize Nobel
      (Benincà and Poletto 2004: 67; [46a-b])

Benincà and Poletto (2004: 67) interpret the contrast between (119a) and (119b) as evidence for the existence of two different subprojections, "hanging topic" (*Mario*) and "scene setting topic" (*nel 1999*), which can only co-occur in that order. Other subprojections postulated in the topic domain are subprojections for list interpretation, for the aboutness topic etc. (cf. Benincà and Poletto 2004 for Romance languages, Badan 2007, Del Gobbo and Badan 2010 for Chinese).

Applied to the Chinese facts in (118), this would require two different scene-setting related topic projections, one above and one below the left dislocated topic *pīpànhuì* 'criticism meeting', each of which should be associated with different semantics, in accordance with the 1:1 relationship between projection and interpretation postulated in the cartographic approach. Besides the problem of how to pinpoint these semantic differences, the picture in Chinese is further complicated by the possibility of adding a third topic and thus increasing the permutation possibilities:

(120) a. *Zhè jǐ   nián, pīpànhuì$_j$,   lǎohàn$_i$ [$_{TP}$ tā$_i$ jiàn-duō t$_j$ le]*
        this several year criticism.meeting old.man   3SG see-much SFP
        'The last couple of years, criticism meetings, the old man, he has seen too many.'

   b. *Pīpànhuì$_j$,   zhè jǐ   nián, lǎohàn$_i$ [$_{TP}$ tā$_i$ jiàn-duō t$_j$ le]*
      criticism.meeting this several year old.man   3SG see-much SFP
      'Criticism meetings, the last couple of years, the old man, he has seen too many.'

   c. *Lǎohàn$_i$, pīpànhuì$_j$,   zhè jǐ   nián, [$_{TP}$ tā$_i$ jiàn-duō t$_j$ le]*
      old.man criticism.meeting this several year   3SG see-much SFP
      'The old man, criticism meetings, the last couple of years, he has seen too many.'

   d. *Lǎohàn$_i$, zhè jǐ   nián, pīpànhuì$_j$,   [$_{TP}$ tā$_i$ jiàn-duō t$_j$ le]*
      old.man this several year criticism.meeting   3SG see-much SFP
      'The old man, the last couple of years, criticism meetings, he has seen too many.'

These different orderings are not expected under the cartographic approach; on the contrary, *lǎohàn* 'old man' as a hanging topic should always precede both the frame-setting topic *zhè jǐ nián* 'the last couple of years' (cf. Benincà and Poletto 2004) and the left-dislocated topic *pīpànhuì* 'criticism meeting' (cf. Badan and Del Gobbo 2010); in other words, only (120c) should be acceptable. It

seems difficult, if not impossible to capture the different orders displayed by Chinese within a cartographic approach where each subprojection has a fixed position within the hierarchy and an associated interpretation. It is thus excluded to postulate e.g. another scene setting topic below the hanging DP topic, and the only way out to account for Chinese would be a multiplication of semantically nearly identical projections at different points in the hierarchy.

Instead, the differences between the possible orderings in (120) can be captured by the corresponding differences in the c-command relations, where the leftmost item is structurally higher than the item(s) to its right in Chinese (cf. C.-T. James Huang 1982, 1983; C.-C. Jane Tang 1990, 2001; Ernst 2002). Given that this structural hierarchy determines what C.-T. James Huang (1983: 60) calls "modificational scope", the slight meaning differences observed for the different orderings in (120) can then be accounted for.

Bare nouns as topics are a nice case to illustrate that the interpretation of a topic is not provided by the semantics of the relevant projection *per se* as in Italian, but that it results from the interaction of several factors . As noted by Y.-H. Audrey Li (1997: 18), a bare noun can be interpreted as definite, indefinite or generic in Mandarin Chinese. With an individual-level predicate such as *xǐhuān* 'like' in the TP (cf. [121a]), a bare noun topic is understood as generic, whereas in combination with a stage-level predicate such as *wèi* 'feed' or *guānhǎo* 'close' it is interpreted as definite. (Note that for [121b], a particular context such as house sitting is necessary.)

(121) a. *Māo, wǒ tèbié   xǐhuān, gǒu, wǒ bù xǐhuān*
           cat 1SG especially like   dog 1SG NEG like
           'Cats, I like very much, dogs, I don't like.'

       b. *Māo, wǒ gāng wèi -guo le , huā , wǒ yě   jiāo-le   shuǐ*
           cat 1SG just feed-EXP SFP flower 1SG also pour-PERF water
           'The cat, I just fed it, the flowers, I watered them, too.'

(122) *Chuānghu, wǒ gāng guānhǎo-le, bié dānxīn*
       window   1SG just close   -PERF NEG worry
       'The windows, I closed them, don't worry.'

Bare nouns can also be used to demonstrate that the lack of a 1:1 relationship between position and interpretation is in fact a general property of Chinese grammar and does not only hold for the topic position. For a bare noun in postverbal position, the definite interpretation is not only possible (also cf. Lisa L.-S. Cheng and Sybesma 1999), but– depending on the context – may even be pre-

ferred to the indefinite interpretation, thus challenging Li and Thompson's (1976) (still influential) claim, based on examples such as (125), that a bare NP in postverbal position is always interpreted as indefinite.

(123) *Rúguǒ nǐ bù qǐng tóngshì,   tāmen jiù   huì hěn shēng   qì*
      if   2SG NEG invite colleague 3PL   then will very produce air
      'If you don't invite the [=your] colleagues, they will be very angry.'

(124) *Nǐ zhǎodào-le   túshūguǎn méi yǒu?*
      2SG find -PERF library   NEG have
      'Did you find the library?'

(125) *Tā mǎi -le   huā   le*
      3SG buy-PERF flower SFP
      'She bought flowers.'

Last, but not least, as we have seen, there is no fixed position for XPs carrying *new* information, either (*contra* LaPolla 1995, Xu Liejiong 2004). As a result, the lack of a fixed interpretational value for the topic in Chinese ties in with the overall grammar of Chinese where no simple correlation exists between a given syntactic position and the semantics obtained for an XP in that position.

7 The syntax and semantics of the sentence periphery (part II): Why particles are not particular[*]

Like the topic, sentence-final particles are also located in the periphery above the sentence proper (TP), but they surface at the opposite side. As is well-known, *particle* is just a cover term *faute de mieux* for mostly monosyllabic and unstressable elements with uncertain categorial status. One of the main aims of this chapter is therefore to demonstrate that the sentence-final particles (SFPs) in Chinese can very well be assigned a categorial status and are best analysed as complementisers, i.e. as functional heads selecting a sentential complement.

This might at first sight look implausible, because the term *complementiser* was initially reserved for items heading subordinate clauses such as *that* and *if* in English. It makes sense, however, within the *split CP* approach initiated by Rizzi (1997) where the sentence periphery, i.e. the domain above the sentence proper (TP) is shown to consist of different layers of C, both in embedded and matrix sentences. In fact, Zhu Dexi (1982) had already demonstrated that SFPs in Chinese matrix sentences are to be divided into three classes with a rigid ordering, i.e. a fixed hierarchy, distinguishing the innermost "tense"-related particles nearest to the sentence from the more external ones indicating for example the sentence type (e.g. interrogative, imperative) or the speaker's point of view.

Once again, the analysis of SFPs as different types of complementisers to be argued for here is not uncontroversial, because it goes against the widespread assumption that VO languages exclude a (surface) head-final CP (cf. among others Dryer 1992, 2009). In other words, complementisers are claimed to pattern with verbs orderwise and as a consequence, only OV languages are expected to have a (surface) head-final CP with the complementiser following its complement clause. By contrast, Chinese as a VO language should possess head-initial CPs only, like English. Chinese is thus clearly "misbehaving" and

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[*] Since good titles are hard to come by, I recycle part of the title of my *Studia Linguistica* article on SFPs here (cf. Paul 2014). Since the final version of this article was already completed back in 2010, the present chapter incorporates new research results obtained since then and also covers a wider range of data.

once more challenges the general validity of cross-categorial correlations set up in typological studies.

The extensive literature on SFPs – mostly written in Chinese – and the complexity of problems raised by SFPs would easily provide enough material for an entire book. Accordingly, the issues that can be addressed in this single chapter present a selection only and mainly concern fundamental questions pertaining to the syntax of SFPs. The SFP *ne*, however, is examined in more detail; *ne* is chosen because it is one of the better studied SFPs, and also because it is known to non-sinologists for its alleged role as an interrogative clause typing complementiser (cf. Cheng 1991). *Ne* thus serves as a case study outlining the questions to investigate for each SFPs and the problems encountered in the analysis of SFPs, such as the possible homophony between SFPs and the realization of the head of Topic Phrase, on the one hand, and the possible homophony between SFPs realizing different subprojections in the split CP, on the other. (In fact, three different *ne's*, *ne₁*, *ne₂*, *ne₃*, have to be postulated.) Note in this context that a monograph with an exhaustive survey of all SFPs and a systematic analysis of their syntactic and semantic properties is still a missing desideratum in the domain of Chinese linguistics, the numerous studies on SFPs concentrating on individual items only and rarely taking into account Zhu Dexi's (1982) work.

The chapter is organized as follows. Section 7.1 introduces Zhu Dexi's (1982) classification of SFPs into three distributional classes and recasts it into a (slightly modified) split CP à la Rizzi (1997). Section 7.2 presents an overview of the three-layered CP in Chinese: TP < low CP < ForceP < AttitudeP and provides evidence in favour of SFPs as C heads, displaying e.g. selectional restrictions on the type of their clausal complement. Section 7.3 introduces the fundamental root vs non-root asymmetry at work in the Chinese C-system and identifies two exclusively non-root Cs, i.e. *de* in the propositional assertion construction and *dehuà* in conditional clauses. Section 7.4 examines the interaction of the SFP hierarchy with the 'Topic > *lián* 'even' Focus' hierarchy established in chapter 6.4 above. The conclusion in section 7.5 finally briefly discusses the findings in this chapter against the backdrop of approaches such as Toivonen (2003) who considers particles as "outliers" and relegates them to a domain outside of syntax proper.

7.1 Sentence-final particles as heads in a split CP

Before introducing Zhu Dexi's (1982) analysis of SFPs, a few sentences with SFPs are provided in order to illustrate the phenomenon under discussion:

(1)   *[_{CP} [_{TP} Tā bù chōu yān   ] le]*
          3SG NEG inhale cigarette SFP
        'He no longer smokes.'

(2)   *[_{CP} [_{TP} Nǐ   gāngcái shuō shénme] láizhe]* ?
          2SG just   say what   SFP
        'What did you just say?'

While *láizhe* is in general acknowledged as an SFP indicating that the event took place in the "recent past" (cf. Song Yuzhu 1981: 275, Lü Shuxiang 2000 [1980]: 348-349), the semantic import of *le* is much more difficult to grasp. For the time being I resort to Li and Thompson's (1981: 240) label "currently relevant state", which in the case of (1) with a negated VP results in the interpretation of 'no longer' (cf. section 7.2.1.2 below for further discussion).

(3)   a. *[_{TP} Tā huì shuō zhōngwén]*
               3SG can speak Chinese
            'He can speak Chinese.'

        b. *[_{CP} [_{TP} Tā huì shuō zhōngwén] ma]?*
               3SG can speak Chinese   SFP
            'Can he speak Chinese?'

(4)   *[_{CP} [_{TP} Bāng bāng wǒ de máng   ] ba]*
          help help 1SG SUB assistance SFP
        'Give me a hand.'

In (3b) *ma* encodes the sentence type, i.e. a yes/no question, and Chao's (1968: 807) "advisative" *ba* in (4) conveys the softened character of the imperative.

(5)   *[_{CP} [_{TP} Tā pǎo de zhēn   kuài] a!]*
          3SG run DE really fast   SFP
        'He runs really fast!'

(6)   *Jīntiān xīngqīsān   ei ! [_{CP} [_{TP} Nǐ bié wàngle xiàwǔ*
        today   Wednesday SFP   2SG NEG forget afternoon
        děi   shàng kè] ei!]
        must attend class SFP
        'Today is Wednesday (mind you)! Don't forget you have classes in the
         afternoon!'   (slightly changed example from Zhu Dexi 1982: 213)

Exclamatives such as (5) are one of the multiple contexts for the SFPs *a* (cf. 7.2.3.3 below for more discussion). As for *ei*, this SFP is used as a kind of "gentle reminder", i.e. in cases where the speaker assumes the other person to be up to date concerning the matter at hand, but nevertheless issues a reminder.

Finally, as indicated by the bracketing, the SFPs are construed with the entire sentence and have scope over it. More precisely, SFPs as C-heads select the sentential complement to their left, as evidenced by the numerous syntactic and semantic constraints on the type of complement observed for individual SFPs to be discussed in the remainder of this chapter.

7.1.1 Zhu Dexi's (1982) three classes of SFPs

Zhu Dexi (1982: 207–213) identifies three distributional classes of SFPs whose relative order is fixed. The first class occurs nearest to the sentence (TP) and is said to express "tense"; it comprises SFPs such as *le* and *láizhe* (cf. [1] and [2] above). The SFPs of the second class, SFP$_2$, to the right of the position for SFP$_1$ convey notions such as question (*ma*) and imperative (*ba*) (cf. [3] and [4] above). The third, "outermost" class of SFP$_3$, finally, is explicitly stated to be different from the two other classes, because it involves the speaker's attitude or feelings; SFPs belonging to this class are e.g. *a*, *ei* etc. (cf. [5] and [6] above). Zhu Dexi (1982: 208) emphasizes that co-occurring SFPs belong to hierarchically different levels. We thus obtain the following configuration:

(7)   [$_{TP}$ .....] SFP$_1$] SFP$_2$] SFP$_3$]

This corresponds to the relative order between SFPs established by Hu Mingyang (1981: 348), who is, however, much less exhaustive than Zhu Dexi (1982) and also does not attempt a semantic characterization of the three classes obtained.

The ordering restrictions underlying the configuration in (7) are illustrated below:

(8)   a. *[$_{CP2}$ [$_{CP1}$ [$_{TP}$ Tā bù chōu yān   ] le] ma]?*
                    3SG NEG inhale cigarette SFP1 SFP2
         'Does he no longer smoke?'

       b. **[$_{CP1}$ [$_{CP2}$ [$_{TP}$ Tā bù chōu yān   ] ma] le]?*
                    3SG NEG inhale cigarette SFP2 SFP1

(9)   a.   *[CP2 [CP1 [TP Bié chàng] le] ba]!*   Hu Mingyang (1981: 416)
                 NEG sing   SFP1 SFP2
       'Sing no more!'

   b. * *[CP1 [CP2 [TP Bié chàng] ba] le]!*
                NEG sing   SFP2 SFP1

(10)   a.   *[CP3 [CP2 [TP Jìnlái] b'ou (=ba+ou)]]!*   (Zhu Dexi 1982: 212)
                enter   SFP(fusion)
       'Hurry, come in!'

   b. * *[CP2 [CP3 [TP Jìnlái] ou] ba]!*
                enter   SFP3 SFP2

Starting with the last example (10), a SFP$_3$ of class 3 such as *ou*, which expresses the speaker's impatience, must follow the SFP$_2$ *ba*; since it consists of a single vowel, it fuses phonetically with the preceding SFP into a single syllable. Likewise, the innermost SFP$_1$ *le* must always precede SFP$_2$ such as the interrogative *ma* and the imperative *ba* (cf. [8a] and [9a]), as shown by the unacceptability of the opposite order (cf. [8b] and [9b]).

In fact, Zhu Dexi (1982) basically uses the same reasoning in order to determine the relative order of SFPs as Rizzi (1997) does when establishing the hierarchy of the different projections in the split CP (cf. the the discussion immediately below). Since – for semantic reasons – it is rather difficult to construe and find sequences where all the three classes co-occur, Zhu (1982: 208) applies the notion of *transitivity* in order to determine the relative order: if a given SFP *A* is shown to precede the SFP *B* and the SFP *B* precedes the SFP *C*, then necessarily the SFP *A* likewise must precede *C*. This same notion of transitivity also underlies Zhu Dexi's (1982: 208) statement that the relative order always holds, i.e. also when a given SFP position remains empty, as in the combination of the SFP$_1$ *le* with the SFP$_3$ *ou* in (11) below. Last, but not least, SFPs of the same class are mutually exclusive, such as e.g. *le* and *láizhe*, which both belong to the innermost class, SFP$_1$ (cf. [12] below).

(11)   *Bù zǎo   l'ou [= le + ou]*
        NEG early   SFP(fusion)
        'Hey, it's already late!'

(12)   a.   *[CP1[TP Wǒ chī wǎnfàn] le   / láizhe]*
               1SG eat dinner   SFP1/   SFP1

'I (just) had dinner.'

    b. * *[CPI[TP Wǒ chī wǎnfàn]{ le   láizhe}/ {láizhe le}]*
                  1SG eat dinner   SFP1 SFP1   /   SFP1   SFP1

7.1.2 The split CP à la Rizzi (1997)

Let us now turn to the split CP proposed by Rizzi (1997, 2004). As already discussed in chapter 6.4, Rizzi (1997) demonstrated in great detail that the sentence periphery above TP does not consist of a single CP hosting e.g. the fronted *wh*-phrase (and the "dummy" verb *do*, in the absence of an auxiliary verb) in English sentences such as *[CP Whati [C' [C° did] [TP he buy ti]]]?*. On the contrary, the sentence periphery is "split up", i.e. divided into numerous subprojections displaying a rigid order, among them projections for topic phrases and focus phrases. As for the heads present in the left periphery, i.e. complementisers, he likewise argued that they are of different types and hence occur in different projections within the split CP. Complementisers indicating the type of clause (declarative "force", interrogative "force" etc., e.g. *that, whether* in English; *che* in Italian) head the projection ForceP *preceding* the topic and focus projections; by contrast, prepositional complementisers in Romance such as Italian *di* introducing infinitivals realize the head of FinitenessP, a projection immediately above TP and *below* topic and focus projections:

(13)   *Penso   (*a Gianni) <u>che</u>, a Gianni, gli   dovrei parlare*
         think.1SG to Gianni that to Gianni him should speak
         'I think that to Gianni, I should speak to him.'

(14)   *Penso,   a Gianni, <u>di</u> (*a Gianni) dovergli   parlare*
         think.1SG to Gianni that to Gianni him.should speak
         'I think, to Gianni, 'of' to have to speak to him.' [sic]
         (Rizzi 1997: 304, [61], [62])

Subsequent studies of mostly Romance and Germanic languages extended this approach to matrix clauses and analysed as different types of complementisers those items at the sentence periphery that had so far been called "particles", for want of a precise categorial status (cf. among others Munaro and Poletto 2002, 2011). Importantly, these studies also provided evidence for the existence of a discourse-related additional projection *above* ForceP, equivalent in function to the projection hosting SFP3 in Chinese (cf. among others Benincà 2001 for Ro-

mance languages; cf. Haegeman 2008, 2014; Haegeman and Hill 2013 for West-Flemish):

(15)   DiscourseP > ForceP > FiniteP > TP

(Note that [15] concentrates on the subprojections within the split CP that are exclusively realized by heads, to the exclusion of topic and focus phrases.). The hierarchy in (15) thus extends Rizzi's (1997, 2004) original hierarchy where the highest projection had been ForceP.

    If we abstract away from the directionality of the different subprojections composing the split CP (head-initial for Rizzi [1997, 2004], head-final in Chinese) and just focus on the nature of the projections and their relative hierarchy, the parallelism between (15) and Zhu Dexi's (1982) configuration (cf. [7] above) is evident. The lowest projection, FiniteP, is instantiated by the first class of SFPs (labeled *tense* by Zhu Dexi); ForceP is realized by SFPs of the second class indicating the sentence type (e.g. interrogative, imperative etc.) and the highest projection hosts the SFPs of the third class conveying the speaker's attitude or feelings, hence labelled *AttitudeP* in Paul (2009) (corresponding to DiscourseP in [15]). Given that the split CP in Chinese is exclusively a phenomenon of matrix clauses, it is evident that the lowest projection hosting SFP_1 cannot be described in terms of (non-)finiteness, in contrast to FiniteP in Rizzi's original hierarchy, which hosts embedding Cs such as Italian *di* introducing infinitival clauses. Accordingly, the label *low CP* is chosen for this innermost layer in Chinese.

(16)   Hierarchy of SFPs in the split CP for Chinese (cf. Paul 2007, 2009):
           TP < ClowP < ForceP < AttitudeP

    Munaro and Poletto (2002, 2011) as well as Haegeman (2008, 2014) and Haegeman and Hill (2013) derive the sentence-final position of SFPs in the spirit of Kayne (1994). They posit an original head-initial structure and raise the clausal complement to the specifier of the relevant subprojection in the split CP. Xu Ding (1997, chapter 4) likewise assumes head-initiality for the two subprojections he posits for Chinese, *viz* DeicticP (realized by *le*) and CP (realized by all the other SFPs), thus conflatingForceP heads *ma*, *ne*, *ba* and Attitude heads *ou*, *a*). A problem with the Kaynean approach which comes to mind immediately is the failure for the SFP to c-command its raised complement. C-command is, however, required to hold between e.g. the yes/no-question Force head *ma* and its TP-complement for the licensing of *wh*-indefinites in TP (cf. Victor Junnan Pan 2011b: 135 and references therein):

(17) $[_{CP} \, [_{TP} \, N\check{\imath} \quad ch\bar{\imath}\text{-}le \qquad sh\acute{e}nme \,] \, ma]?^{1}$
              3SG eat-PERF what   SFP
        'Have you eaten something?'

The present chapter does not explore the possibility of implementing a Kaynean approach, but takes the surface position of SFPs at face value (cf. Bayer 1999 for a similar approach to languages with both a head-initial and head-final CP). Accordingly, the split CP in Mandarin Chinese is head-final as shown in (16).

7.2 Overview of the three-layered split CP in Chinese

Before starting the discussion of SFPs as such, some preliminary remarks concerning the phrase structure of Chinese are called for. C.-T. James Huang (1982, ch. 2) argued that IP as well as the lexical categories are head-initial (with the exception of the head-final NP), resulting in a uniformly right-branching structure for the IP/TP. Given that the projections above *v*P up to TP such as AspP and AuxP are also head-initial (cf. chapter 2.2.1 above), any element after the object(s) of the verb must occupy a position outside the *v*P, and by extension outside the IP/TP.[2] This is precisely the case for SFPs. In fact, their position outside the (core) sentence has long been known in the Chinese literature where they have always been described as being in relation with the entire sentence.

The analysis of SFPs as complementisers goes back to Thomas Hun-tak Lee (1986) who was the first to claim C-status for the yes/no question particle *ma*. The analysis of *ma* as C became the standard analysis and was confirmed by subsequent studies, which also introduced another C, i.e. *ne* (cf. among others L.-S. Lisa Cheng 1991, Y.-H. Audrey Li 1992). Tang Ting-chi (1989: 541) extended the C analysis to SFPs in general, a proposal adopted in Gasde and Paul (1996), *modulo* the introduction of a dedicated projection Topic Phrase (cf. chapter six above) hosting the topic rather than locating it in Spec,CP as assumed by Tang Ting-chi (1989: 540). The architecture of the Chinese sentence periphery was developed in more detail within Rizzi's (1997) split CP approach by Paul (2005b) and subsequent work, where an additional projection AttitudeP *above* Rizzi's ForceP was motivated (cf. Paul 2007, 2009, 2014). The research on SFPs within

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1 It is not clear whether c-command between the trace/copy left by the raised TP and *ma* would suffice here. For other problems raised by a Kaynean account of the CP in Mandarin Chinese (and their solution), cf. Sybesma (1999b).

2 Note that SFPs were not discussed in C.-T. James Huang (1982).

the split CP approach inspired by Rizzi (1997) has gone beyond Mandarin and included other Sinitic languages (cf. among others Li Boya 2006 on Cantonese, Mandarin and Wenzhou; Sybesma and Li Boya 2007 on Cantonese, and Hsieh and Sybesma 2008 on Cantonese and Taiwan Southern Min). The present chapter exclusively concentrates on Mandarin.

7.2.1 Low CP: the C_1 heads *láizhe*, *le*, *ne₁*

The SFPs realizing low C to be examined here are *láizhe*, *le*, and *ne*. As will become clear in the ensuing discussion, being "innermost" SFPs they are all sensitive to the properties of the sentence-internal predicate and in that respect are comparable to Rizzi's FiniteP, which entertains a close relationship with the [±finite] nature of the extended verbal projection within TP. According to Zhu Dexi (1982: 208), the three SFPs *láizhe*, *le*, *ne* are all "tense-related", as illustrated in the minimal triplet below:

(18)   a.   *Xià yǔ*   <u>*ne*</u>   Zhu Dexi (1982: 209)
        fall rain   CLOW
        'It's (still) raining.'
        (Zhu Dexi's comment: It was raining before.)

       b.   *Xià yǔ*   <u>*le*</u>
        fall rain   CLOW
        '(Look), it's raining.'
        (Zhu Dexi's comment: It didn't rain before.)

       c.   *Xià yǔ*   <u>*láizhe*</u>
        fall rain   CLOW
        'It just rained.'
        (Zhu Dexi's comment: It rained a moment ago.)

On the basis of these examples, Zhu Dexi (1982: 209) proposes the following interpretative values for the three SFPs: *láizhe* indicates that the event has occurred in the recent past, *le* signals that the situation at hand is (conceived of as) new, and *ne₁* expresses a continuing situation. Naturally, this characterization is not meant to postulate *tense* as a verbal category for Chinese. It rather attempts to capture the semantic import of the SFPs, which is also reflected in the constraints imposed on the type of TP each SFP can select, to be examined in detail in the following sections.

7.2.1.1 The low *C láizhe*

Láizhe usually indicates that the event time is recent past and then often co-occurs with adverbs such as *gāngcái* 'just, a moment ago'

(19)   *Tā gāngcái hái zài zhèr láizhe, zěnme yī zhuǎnyǎn bù jiàn le?*
       3SG just   still be here CLOW how   1 twinkling NEG see CLOW
       'He was still here a moment ago, how come he has disappeared all
        of a sudden?'
       (Lü Shuxiang 2000 [1980]: 348)

Note, though, that what counts as "recent past" depends on the speaker's judgement of the immediacy of the event at hand (cf. Song Yuzhu 1981: 272). Accordingly, *láizhe* is compatible with temporal expressions such as *qián jǐ nián* 'the past couple of years', when the speaker wants to indicate that time has passed very fast and that the event still feels as though very much present:

(20)   *Qián jǐ   nián tā hái zài   zuò shēngyi láizhe*
       past several year 3SG still PROGR do business CLOW
       'In the past couple of years, he was still doing business.'

Furthermore, "recent past" can also apply to the speech time of a preceding utterance or refer to a former state of knowledge as in (22b) (cf. Chao Yuen Ren 1968: 810):

(21)   *Shéi fā   yán   láizhe?*
       who issue speech CLOW
       'Who did you say would give a speech ?'

(22)   a.   *Nǐ   xìng shénme?*
            2SG call   what
            'What's your family name?'

       b.   *Nǐ   xìng shénme láizhe?*   (Chao Yuen Ren 1968: 810)
            2SG call   what   CLOW
            'What (did you just say) is your family name?'
            'What was your family name?' (I forgot.)

Being a low C, *láizhe* has access to material inside TP, as evidenced by the fact that *láizhe* cannot select as complement a TP containing a telic predicate (cf. Song Yuzhu 1981: 273):

(23)   * *Tā rù   dǎng láizhe*
       3SG enter party CLOW
       (Intended: 'He entered the party recently.')

Láizhe "recent past" is incompatible with telic verbs because their resultant state still holds at speech time, which is in contradiction with *láizhe* precisely excluding the speech time.

    Láizhe is also incompatible with TPs whose predicate is negated (by either *bù* and *méi*), because in addition to locating the event in the recent past it also asserts its having taken place (cf. Song Yuzhu 1981: 275, Lü Shuxiang 2000 [1980]: 348-349):[3]

(24)   a.   *Nǐ gāngcái shuō shénme láizhe ?*
            2SG just   say what   CLOW
            'What did you just say?'

       b.   *Wǒ méiyǒu shuō shénme (*láizhe)*
            1SG NEG   say what   CLOW
            'I didn't say anything.'

The event assertion component associated with *láizhe* also accounts for the fact that only *wh*-questions are compatible with *láizhe* (cf. [24]), to the exclusion of yes/no questions formed by adding *ma*:

(25)   * *Tā fā   yán   láizhe ma ?*   (Lü Shuxiang 2000 [1980]: 349)
       who issue speech CLOW FORCE
       (Intended: 'Did she just give a speech?')

Consequently, *láizhe* is acceptable in rhetorical questions, where its assertion component is reinforced:

(26)   *Zuótiān   nǐ shì bù shì qù kàn xiāngshān láizhe?*
       yesterday 2SG be NEG be go see Xiangshan CLOW

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3 This constraint might be too strong, given that some of the native speakers consulted accepted *láizhe* in sentences with a negated predicate (cf. [24b]) as well as in non-rhetorical yes/no questions with *ma* (cf. [25]), in contrast to the other set of speakers confirming the judgements in Song Yuzhu (1981) and Lü Shuxiang (2000 [1980]: 349). Since the first set of speakers considering (24b) and (25) as well-formed with *láizhe* all belong to the younger generation, it is not excluded that for them *láizhe* no longer possesses the event assertion feature.

'Didn't you go to see the Xiangshan yesterday?'
(Lü Shuxiang 2000 [1980]: 349)

(27)   *Wǒ gāngcái bù shì gēn nǐ shuō láizhe ma?*
         1SG just   NEG be with 2SG talk CLOW FORCE
         Wǒ bù xiǎng qù
         1SG NEG want go
         'Didn't I just tell you? I don't want to go.'

(27) nicely illustrates that *láizhe* is compatible with the negation *bù shì* 'isn't it the case that...' used to form a rhetorical question here. (27) allows us to identify *láizhe* as a low C, which has to precede SFPs realizing ForceP such as *ma*, in accordance with the hierarchy 'TP < ClowP < ForceP'.

(28)   a.   [ClowP[TP *Wǒ chī wǎnfàn*] *le*   / *láizhe*]
                  1SG eat dinner   CLOW/ CLOW
           'I (just) had dinner.'

       b. *[ClowP[TP *Wǒ chī wǎnfàn*]{ *le*   *láizhe*}/ {*láizhe le* }]
               1SG eat dinner   CLOW CLOW / CLOW   CLOW

The low C status of *láizhe* is further confirmed by the impossibility of its cooccurrence – in either order – with another low C such as *le* (cf. [28b]), to be discussed in the next section.

7.2.1.2 The low C *le*

As already observed by Lü Shuxiang (1942: 260; section 15.21), the semantic import of *le* is extemely difficult to capture. This is probably the reason why of the eighty pages devoted to SFPs in Li and Thompson (1981: 238–318), sixty pages are filled with examples for *le* alone.[4] The present section does not pro-

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[4] The remaining twenty pages discuss *a, ou, ba*, and *ne*, the SFP *ma* being examined in chapter 18 on questions. Though my presentation in this chapter does not claim exhaustivity, Li and Thompson's (1981: 238) statement that there are six SFPs is surprising, given the much more comprehensive inventory reported in the literature preceding their grammer, among them Chao Yuen Ren (1968: 797–814, section 8.5.5), who lists as many as twenty-six SFPs (including some extraneous items, though). They do not seem to be aware of the strict ordering restrictions observed by Zhu Dexi (1982, ch. 16) for SFPs in general, either. On the contrary, Li and Thompson (1981: 238) seem to consider the strict ordering as an idiosyncrasy of *le*:

vide any progress on that thorny issue, either, but instead concentrates on the interaction of the low C *le* and material inside TP. Li and Thompson's (1981: 238) label "currently relevant state" for *le* is adopted here, for it captures rather well the – admittedly very minimal – common denominator for the different cases of *le*, i.e. the fact that it "closes off" the sentence and relates the event to the speech time (in the absence of any other explicit reference time), which might induce an interpretation of the situation as being new.[5] (29) – (32) below represent a very small sample of sentences illustrating the point just made, *viz.* that it is often difficult to determine the meaning *le* contributes to the sentence. (For more examples, cf. Li and Thompson 1981: 238–300).

(29) [*ClowP*[*TP* *Wǒ zuótiān*   *dào Zhāng jiā*   *chī fàn*] *le*   ]
                  1SG yesterday go   Zhang home eat food CLOW
        'I went to the Zhangs for dinner yesterday.'
        (Chao Yuen Ren 1968: 798)

(30) *Xià xuě*   *le!*
        fall snow   CLOW
        '(Look,) it's snowing.'

(31) *Tā shì xìzhǔrèn*   *le*
        3SG be institute.director CLOW
        'He is the institute director (now).' [implying he wasn't before]
        (based on example [25] in Marjorie K.M. Chan 1980: 53)

 "...[*le*] can co-occur with certain other particles, such as *a, ou,* and the question particle *ma*, all of which, if they occur, must follow *le*."

5 Y.-H. Audrey Li (1992: 153, note 16) tentatively suggests Infl-status for the SFP *le*. Given its restricted acceptability in finite embedded clauses (cf. section 7.3.2 below), this cannot be correct, though. The same caveat applies to Tang Sze-Wing (1998: 39 ff) who locates the SFPs *le* and *láizhe* in T (and stipulates T-to-C movement in Chinese). Sybesma (1999a: 66) contents himself with observing that "sentence-*le* heads a projection which performs crucial functions TP is supposed to perform in other languages". Finally, Li Boya (2006: 171) – without further explanation – postulates *le* as instantiation of the category *Deik*, the latter claimed to be situated below ForceP and above FinP in the Chinese split CP. The only other passage mentioning *le* is on page 125 where it is likened to the SFP *le* in Cantonese "mark[ing] realization" and illustrated by the Mandarin Chinese example (i) (her glosses and translation):

(i)   *Wǒ xīn lǐ*   *biàn* *de gāoxìng hé qīngsōng de duō* *le*
       1SG heart inside become DE happy   and relieved DE much PRT
       'My heart has become much happier and more relieved.'   (= Li Boya 2006: 125, [3b])

(32)   [*CPlow*[*TopP*[*TP* *Wǒ yī   ān   mén-líng*] [*Top'*[*TP* *tā jiù   lái   kāi   mén] le*]]]
              1SG once ring door-bell   3SG then come open door CLOW
       'As soon as I rang the door bell, he came and opened the door.'
        (slightly modified example from Chao Yuen Ren 1968: 799)

In (29), *le* signals that the proposition is presented by the speaker as her/his contribution relevant to the conversation at hand and can be paraphrased as 'here is what I have to say'. Example (30) illustrates that a situation can be presented as new with respect to the subjective perception of the speaker, i.e. it might have snowed before, but it is only at this moment that the speaker notices it. *Le* can also indicate that a situation obtains at the speech moment and did not prevail before, hence leading to its interpretation as a new situation (cf. [31]). (32) finally shows that when an explicit reference time is provided ('as soon as I rang the bell'), *le* relates the event to that time.

The semantic contribution of *le* is more straightforward in sentences containing the perfective aspect suffix *-le* or the the "neutral" negation *bù*, compatible with stative and activity verbs (cf. among others Teng Shou-hsin 1973, Li and Thompson 1981, Ernst 1995, Hsieh Miao-Ling 2001, Lin Jo-wang 2003).

(33)   a.   *Wǒ zài zhèr zhu -le   wǔ nián le* [6]   (Zhu Dexi 1982: 209)
             1SG at   here live -PERF 5   year CLOW
             'I have been living here for five years now.'

       b.   *Wǒ zài zhèr zhu -le   wǔ nián*
             1SG at   here live -PERF 5   year
             'I (have) lived here for five years.'

(34)   [*ClowP*[*TopP* *Nà*   [*Top'*[*TP* *wǒ jiù   bù děng tā] le]]]
              in.that.case   1SG then NEG wait 3SG CLOW

---

6 As witnessed by their co-occurrence within the same sentence, the verbal suffix *-le* indicating perfective aspect is distinct from the homophonous SFP *le*, "even though" both behave as clitics on the surface and form a phonetic unit with the preceding word (cf. among others Chao Yuen Ren 1968: 246, Teng Shou-hsin 1973, Marjorie K. M. Chan 1980, Li and Thompson 1981: 296, Sybesma 1999a: 65). Unlike the SFPs *le* realizing C, the perfective *-le* instantiates the head *Asp°* situated above *v*P and attracting V (cf. Lin Tzong-Hong 2001; Paul and Whitman 2010). Although the non-identity, i.e. homophony of the perfective aspect suffix *-le* and the low C *le* has been established for half a century now, claims that both items instantiate one and the same category regularly make their reappearance in the literature, a bit like the famous Loch Ness monster.

'In that case I will no longer wait for him.'

As emphasized by Zhu Dexi (1982: 209), *le* relates the event to the speech time, which leads to the meaning differences between (33a) and (33b); while (33b) leaves open whether the subject *wǒ* 'I' still lives here, (33a) with the SFP *le* unambiguously states that my living here still obtains at the speech time. Concerning sentence (34), its meaning is derived in a clearly compositional way, which nicely reflects that *le* as C has scope over the entire sentence: *le* signals that the proposition 'I won't wait for him' obtains at the speech time (in the absence of any other reference time), which leads to 'I will no longer wait for him'.

The situation is different when the sentence contains a predicate negated by *méi*:

(35) a. *[TP Tā méi chī wǔfàn]*
     3SG NEG eat lunch
    'He hasn't eaten lunch.'

  b. **[ClowP[TP Tā méi chī wǔfàn] le]*
       3SG NEG eat lunch CLOW

(35b) is unacceptable because there is a contradiction between the negation of the completion of an event mediated by *méi* and the requirement of *le* to relate this state of affairs to the speech time and present it as a newly obtained situation (also cf. Sybesma 1999a: 64).[7]

These observations concerning the impact of the sentence-internal negation on the acceptability of *le* go back to Teng Shou-hsin (1973: 26) and reveal that the low C *le* interacts with material inside TP, on a par with the low C *láizhe* discussed above. In this respect low C is clearly different from the higher projections ForceP and AttitudeP (cf. sections 7.2.2 and 7.2.3 below).

To round up this section, the low C status of *le* is straightforward, because it can only precede, but not follow, a Force head such as *ma* (cf. [36]), nor can it co-occur with another low C such as *láizhe* (cf. [37]).

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7 Low C *le* is only compatible with *méi* when it negates the verb *yǒu* 'have, possess':
(i) *Tā méi yǒu shíjiān le*
  3SG NEG have time CLOW
  'He has no more time.'

(36) a. $[_{ForceP}[_{ClowP}[_{TP}$ *Tā bù chōu yān*   *] le] ma]?*
                    3SG NEG inhale cigarette CLOW FORCE
         'Does he no longer smoke?'

      b. ⋆$[_{ClowP}[_{ForceP}[_{TP}$ *Tā bù chōu yān*   *] ma] le]?*
                    3SG NEG inhale cigarette FORCE CLOW

(37) ⋆$[_{ClowP}[_{TP}$ *Wǒ chī wǎnfàn]{ le   láizhe}/{láizhe le }]*
                    1SG eat dinner   CLOW CLOW / CLOW CLOW

7.2.1.3 The low C *ne₁*

In order to explain the indexation of the low C *ne* as *ne₁*, it is necessary to some-
what anticipate the discussion in the remainder of this chapter, where following
Zhu Dexi (1982: ch. 16) three homophonous SFPs *ne*'s are postulated: low C *ne₁*,
Force *ne₂* and Attitude *ne₃*.[8] Besides the different meanings associated with each
of these heads, to acknowledge the existence of three homophonous *ne* hosted
by distinct subprojections in the split CP is the only way to account for the dif-
ferent orders observed in combination with other SFPs; the assumption of a
single *ne* would simply lead to contradictory formulations of its ordering restric-
tions.

  To my knowledge, Zhu Dexi (1982, ch. 16) is the first to posit three *ne*'s with
different semantic functions, labelling them *ne₁*, *ne₂* and *ne₃*. Since he does so
without giving any further explanation, the task in the following sections is to
provide the arguments underlying his choice and to invalidate the numerous
proposals in favour of a single *ne* (cf. among others Hu Mingyang 1981; Paris
1981: 380–417; William C. Lin 1984; Li Boya 2006: 64–65; Wu Guo 2005; Victor
Junnan Pan 2011b: 94; Constant 2011).[9]

  As pointed out by Zhu Dexi (1982: 210), *ne₁* can combine with sentences ex-
pressing an ongoing activitiy (cf. [38]) or indicating a continuing state (cf. [39]):

(38) *Tā zhèng zài   tiē -zhe biāoyǔ ne*   (Zhu Dexi 1982: 210)
       3SG just   PROGR paste-DUR poster CLOW

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8 Recall from chapter 6.1 above that there also exists a *ne* realizing the head of TopicP, which
being a different category is not subsumed under the SFPs by Zhu Dexi (1982, ch. 16). For more
discussion, cf. section 7.2.2.2 below.
9 To be more precise, for Constant (2011: 1), "sentence-final *ne* is ambiguous between the
durative aspect marker *ne*ASP and the contrastive topic (CT) operator *ne*CT." In other words, he
proposes a unifying analysis of *ne₂*, *ne₃* and Top° *ne*, and distinguishes them from the low C *ne₁*.

'He is pasting posters.'

(39) *Mén   kāi   -zhe ne*
      door   open -DUR CLOW
      'The door is open.'

Admittedly, in (38), it is difficult to decide how much of the progressive semantics is contributed by *ne₁* and how much by the aspectual auxiliary *zài* and the adverb *zhèng* 'just', the more so as *ne₁* can be omitted here. By contrast, *ne₁* in (39) with a stative predicate is obligatory, as mentioned in passing by Zhu Dexi (1982: 210). Against the backdrop of Djamouri and Paul's (2011, 2015) new approach to the verbal suffix *-zhe*, the obligatory nature of *ne₁* in constructions of the type illustrated in (39) provides a clear argument in favour of this *ne₁* as an "innermost" SFPs, i.e. a low C. The thrust of their analysis is the non-autonomous, dependent character of the verb suffixed by *-zhe*; if the latter is not the complement of another head, such as the aspectual auxiliary *zai* in (38), the sentence needs to be "closed off", a function fulfilled by *ne₁* in (39). In other words, *ne₁* has access to and interacts with material inside TP, which – as we have already observed above for *láizhe* and *le* – is a characteristic of low C.[10]

The low C status of *ne₁* is also confirmed by its having to precede SFPs realizing ForceP such as *ba* (cf. [40]) and *ma* (cf. [41]):

(40) *Tā hái méi zǒu ne   ba?*   (Hu Mingyang 1981: 348)
      3SG still NEG leave CLOW FORCE
      'He hasn't left yet, I suppose?'

Note that *ba* here is the Force head used with questions, described by Li and Thompson 1981: 307 as "soliciting agreement". It is not the *ba* in imperatives already encountered above (cf. [4]), which has the effect of softening the order. (For further discussion, cf. section 7.2.2 on ForceP below.)

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10 Evidently, this is an extremely simplified formulation of a rather complex situation. Suffice it to point out here that Djamouri and Paul's (2011, 2015) analysis challenges the received wisdom of *-zhe* as a durative aspect suffix (a label maintained for the glosses, though, *faute de mieux*). In our view, *-zhe* is *not* an aspect marker at all, but a suffix signaling the dependent status of the verbal projection concerned; in other words *-zhe* has *no* inherent semantics. The fundamental difference between *-zhe*, on the one hand, and the aspect suffixes *-le* and *-guo*, on the other, is reflected in the severely constrained use of the latter outside matrix contexts, whereas exactly the opposite holds for *-zhe*, which rather freely ocurs in embedded contexts, but is severely constrained in matrix contexts.

(41)   #*Nǐ dài -zhe yàoshi ne   ma?*
        2SG carry-DUR key   CLOW FORCE
        'Do you have the keys with you
        (Constant 2011: [17]; my glosses and translation)[11]

Being a low C itself, *ne₁* cannot co-occur with other low C such as *láizhe* and *le* (cf. [43] and [44])), irrespective of the order chosen:

(42)   a. *Mén kāi -zhe   ne*   (Zhu Dexi 1982: 209)
         door open-DUR CLOW
         'The door is open.'

      b. *Mén kāi   le*
         door open   CLOW
         'The door is open now.'

      c. *Mén kāi -zhe láizhe*
         door open-DUR CLOW
         'The door was open (a moment ago).'

(43)   *[ClowP[TP *Mén kāi -zhe*]) { *ne   láizhe/láizhe ne* }
             door open-DUR   CLOW CLOW / CLOW   CLOW

(44)   *[ClowP[TP *Mén kāi* { *ne   le   / le   ne* }
             door open   CLOW CLOW / CLOW CLOW

This section has established the existence of the low C *ne₁*, associated with continuing states or ongoing activities. Given this description of the semantics of *ne₁*, it is not surprising that it has been analysed as basically aspectual in nature (cf. Marjorie K. M. Chan 1980), even though *qua* SFP it occupies a position outside the sentence proper. We observe here the same tension between semantic import and syntactic position as in Zhu Dexi's (1982: 208) characterization of the low Cs *láizhe*, *le* and *ne₁* as related to tense, an issue to be taken up at the end of this chapter. Note that the low C *ne₁* cannot be properly described in the rather general terms of "hearer engagement" proposed by analyses at-

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11 Not all of the native speakers consulted accepted (41), hence the mark #. Note that younger speakers were in both groups, accepting or refusing (41).

tempting to unify the different *ne*'s (cf. among others Hu Mingyang 1981; 417; Wu Guo 2005: 47). (For further discussion, cf. sections 7.2.2.2 and 7.2.3.1 below.)

7.2.1.4 Interim summary

The low Cs *láizhe*, *le* and *ne₁* all interact with TP-internal material, i.e. they depend on the properties of the extended verbal projection including its aktionsart, which in turn has an impact on the type of negation to be chosen. Thus, *láizhe* "recent past" is incompatible with telic verbs, whose resultant state still holds at the speech time, a situation not compatible with *láizhe* precisely excluding the speech time. For the group of speakers that associate *láizhe* with an event-assertion feature, *láizhe* is unacceptable with negation and questioning (except for rhetoric questions, which reinforce the assertion). The semantic import of *le* is very difficult to grasp, but the common denominator for the large variety of interpretations associated with *le* seems to be aptly captured by Li and Thompson's (1981: 238) label "currently relevant state". Like *láizhe*, *le* is sensitive to TP-internal material, as witnessed by its incompatibility with *méi* negating the completion of an event. Finally, notwithstanding its status as a SFP, *ne₁* has been likened to "aspect" insofar as it combines with ongoing actions or continuing states. Against this backdrop, Zhu Dexi's (1982: 208) characterization of these three innermost SFPs as "tense-related" is very insightful, even if "tense" here is naturally not meant to refer to a property of the extended verbal projection inside TP itself. Importantly, as far as I can see, the assocation with a certain "tense" is not encoded in the SFP itself, either, but rather obtains as an inference resulting from the interaction between the aktionsart and related properties of the TP-internal predicate, on the one hand, and the semantic features of the SFP itself. This view ties in with the general caveat issued by Hu Mingyang (1981: 416) that due to the complex interaction between the SFPs and the material inside TP it is often very difficult to determine the contribution of the SFPs themselves.

7.2.2 ForceP: the C₂ heads *ma, ne₂, ba*$_{Qconfirmation}$, *ba*$_{IMP}$

This section examines SFPs realizing the head of Force Phrase above Clow Phrase: TP < ClowP < ForceP, i.e. the second projection above TP hosting C-elements. Among these force heads, there is another *ne*, labeled *ne₂*, as well as two different *ba*'s, one conveying a softened imperative (*ba*$_{IMP}$), the other used in confirmation requests and conjectures (ba$_{Qconfirmation}$).

7.2.2.1 The Force head *ma*: yes/no question

As mentioned in the introduction to section 7.2 above, the SFP *ma* indicating the yes/no question status of a sentence (cf. [45b]) was the first SFP to be analysed as C (cf. Lee Hun-tak Thomas 1986, Tang Ting-chi 1989: 540):[12]

(45)   a.   *Tā huì shuō zhōngwén*
           3SG can   speak Chinese
           'He can speak Chinese.'

       b.   [$_{CPforce}$[$_{TP}$ *Tā huì shuō zhōngwén] ma*]?
                  3SG can   speak Chinese   FORCE
           'Can he speak Chinese?'

Since *ma* turns a declarative sentence into a yes/no question, it must have scope over the entire sentence, whence the analysis of *ma* as a C-head taking a clausal complement (TP or ClowP, cf. [48] below).[13] The complement status of TP and the head status of *ma* are confirmed by the fact that *ma* imposes selectional restrictions: it can only select a non-interrogative TP and is therefore incompatible with *wh*-questions (cf. [46a]) and TP-internal yes/no questions in the 'A-*bù*-A' form (cf. [46b]). (For further discussion of 'A-*bù*-A' questions, also called 'A-not-A' questions, cf. C.-T. James Huang 1982: ch. 4.3.3; 1991b; Huang, Li and Li 2009, chapter 7):

(46)   a. *[$_{CPforce}$[$_{TP}$ *Nǐ wèn-le   shéi*]*ma*]?
                   2SG ask-PERF who FORCE
           ('Whom did you ask?')

       b. *[$_{CPforce}$[$_{TP}$ *Tā dǒng   bù dǒng   wèntí*] *ma*]?
                   3SG understand NEG understand problem FORCE
           ('Does he understand the problem?')

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12 Tang Ting-chi (1989: 539–543) explicitly stated that SFPs *qua* C have scope over the entire sentence to their left. He had, however, problems to reconcile this analysis of SFPs as C with the fact that the only position available for topics was Spec,CP at that time, i.e. a position not (strictly) c-commanded by C.

13 Strangely enough, the yes/no question particle *ma* is not considered as an instantiation of the head *Force* by Li Boya (2006: 32), although Rizzi's split CP approach serves as the basis of her dissertation. On the contrary, Li Boya (2006: 171) goes as far as claiming that the clause-typing heads, i.e. Force and Mood in her work, always remain covert in Mandarin and Cantonese (whereas they may be realized overtly in Wenzhou).

Importantly, as discussed in detail by Lu Jianming (1985: 236), a yes/no question in Chinese can also be formed without *ma*, in which case a rising intonation is obligatory (also cf. Pan 2011b: 67):

(47)   *Tā huì shuō zhōngwén* ↗ ?
         3SG can speak Chinese
         'Can he speak Chinese?'

The intonation in a yes/no question with *ma* is either rising as well or flat.[14]

Finally, the Force head status of *ma* is confirmed by its position above, i.e. to the right of low Cs such as *le* (cf. [48] below), *láizhe* (in rhetorical questions, cf. [27] above), and *ne₁* (cf. [41] above).

(48)   [ForceP[ClowP[TP *Tā bù chōu yān*   ] *le*] *ma*]?
                  3SG NEG inhale cigarette CLOW FORCE
         'Does he no longer smoke?'

7.2.2.2 The Force head *ne₂* in "follow-up" questions and a brief digression on so-called "truncated questions"

The SFP *ne₂* is familiar to many scholars in general linguistics because it has been claimed to play a crucial role in "typing" a sentence as question in *wh* in-situ languages such as Chinese (cf. L.-S. Lisa Cheng 1991). More precisely, according to L.-S. Lisa Cheng's (1991) theory of *clausal typing*, languages *either* employ question particles *or* syntactic *wh*-movement to type a clause as a *wh*-question. Importantly, languages are said to make a choice between the two means, the availability of question particles correlating with the lack of syntactic *wh*-movement. Chinese being a language without visible syntactic movement of *wh*-phrases, the particle *ne₂* observed with *wh*-questions was therefore assigned the role of typing.[15]

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14 This is not what Lu Jianming (1985: 236) says. According to him, the intonation in a yes/no question with *ma* can be either rising or *falling*. The falling intonation is said to be the same as in a declarative sentence and to present the default case; the rising intonation is said to emphasize the interrogative character of the sentence. The native speakers consulted can, however, not replicate the falling intonation for *ma*-questions. Special thanks to Victor Junnan Pan for discussion of this point.

15 For recent works challenging Cheng's (1991) *Clausal Typing Hypothesis*, cf. Bruening (2007) and Bruening and Tran (2006).

This analysis is, however, straightforwardly invalidated by the well-known *optionality* of *ne₂* in *wh*-questions (cf. [49]) and A-not-A questions (cf. [50]) (cf. among others Hu Mingyang 1981: 418; Paris 1981: 389; Li and Thompson 1981: 305; Lin William C. 1984: 220):[16]

(49)   *Nǐ   wèn-le   shéi   (ne)?*
          2SG ask -PERF who   FORCE
          '(So) whom have you asked?'

(50)   *Tā dǒng   bù dǒng   wèntí   (ne)?*
          3SG understand NEG understand problem FORCE
          '(So) does he understand the problem?'

Ne₂ contrasts clearly with *ma* which is incompatible with A-not-A questions and *wh*-questions (cf. [46] above). Instead, *ne₂* indicates that the question is not one asked "out of the blue", but is a "follow-up" (cf. Egerod 1994: 303) of the preceding (linguistic or extralinguistic) context, as illustrated in (51) and (52):

(51)   *Nǐ   dǒng   le.*
          2SG understand CLOW
          [CPforce [TopP *Nà* [TP *tā   dǒng   bù dǒng]]   ne*]?
                          then   3SG understand NEG understand FORCE
          'You understand. (But) does he understand?'

(52)   *Wǒ   yǐjīng wèn-le   Zhāngsān.*
          1SG already ask-PERF Zhangsan
          [CPforce[TopP *Nà* [TP *nǐ   wèn-le   shéi] ne*]?
                          then   2SG ask-PERF who   FORCE
          'I have already asked Zhangsan. (So) whom have you asked?'

Given this "follow-up" character of questions with *ne*, they are often preceded by *nà(me)* 'then, in that case'.

   Ne₂ clearly instantiates a Force head C₂, as witnessed by its co-occurrence with the low C *le* in the order '*le ne₂*' (the opposite order '*ne₂ le*' being excluded as expected):

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16 For a detailed discussion and rejection of Aoun and Li's (1993) claim that *wh*-questions always involve a null operator (as a covert version of *ne*), cf. Pan (2011b: ch. 2).

(53)   [*CPforce*[*CLowP*[*TopP* *Nà* [*TP* *nǐ   wèn   shéi*]] *le*]   *ne*]?
                    then   2SG ask   who   CLOW   FORCE
       'So whom have you asked?'

To summarize, *ne₂* is a Force head indicating the 'follow-up' nature of the question at hand and selects interrogative sentences (*wh*-questions and yes/no questions in the 'A-*not*-A' form). *Ma*, by contrast, exclusively selects declarative TPs. In other words, while I adopt Zhu Dexi's classification of *ne₂* as a force head, I do not agree with his analysis of this *ne₂* as an interrogative SFP, where *ne₂* itself bears an interrogative feature. Instead, the interrogative semantics is provided by the sentential complement of *ne₂* which is a question itself.

Accordingly, a yes/no question cannot be construed by adding *ne* to a declarative sentence, irrespective of the intonation (also cf. Jin Lixin 1996). However, sentences such as (54b) seem to contradict this statement immediately:

(54)   a.   *Míngtiān   nǐ   kàn   bù   kàn   diànyǐng? Bù xiǎng kàn.*
            tomorrow 2SG see   NEG see   film   NEG want   see
            'Tomorrow, do you want to go to the movies? No, I don't want to.'

       b.   *Rúguǒ fàngyìng "shàolín sì"   ne?*
            if   project   Shaolin temple TOP
            'And if they show the "Shaolin temple"?'
            (Lu Jianming (1984: 105, [18])

This is only a contradiction at first sight, though, because it is well-known that this type of example represents an elliptical structure where the comment sentence, itself a question, remains implicit and where only the topic followed by *ne* is overtly expressed (cf. Victor Junnan Pan 2011b: 87–93).[17] In other words, (54b) is a (sentential) topic, i.e. a conditional clause occupying the topic position (i.e. Spec,TopP, cf. chapter 6.1 above), as becomes evident when the implicit comment is spelt out:

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17 To be more precise, whereas there is a consensus about the elliptical nature of 'XP *ne* ?' the identity of the original structure from which material has been elided is controversial. While for Lu Jianming (1984) the underlying structure is a *wh*-question or an A-not-A question with the force head *ne₂* (cf. [55a] immediately below), for Wu Guo (2006) this type of truncated question (which he calls "thematic question") represents a separate question type of its own. Victor Junnan Pan (2011b: 87–93) correctly rejects this latter view. Li and Thompson (1981:305), whose term "truncated question" I have borrowed here, only illustrate it with one example, which they do not discuss any further.

(55)   a.   *Rúguǒ fàngyìng "shàolín sì" ,   nǐ kàn bù kàn (ne)?*
            if   project   Shaolin temple 2SG see NEG see   FORCE
            'If they show the "Shaolin temple", do you want to see it or not?'

        b.   *[TopP[TP Rúguǒ fàngyìng "shǎolín sī"] [Top' ne] [TP nǐ   kàn bù   kàn]]]?*
               if   project   Shaolin temple   TOP   2SG see NEG see
            'If they show the "Shaolin temple", do you want to see it or not?'
            (Lu Jianming 1984: 105, [18])

Importantly, unlike what Lu Jianming (1984) suggests in his complete paraphrase (55a) with an optional *ne₂*, *ne* in the "truncated question" (cf. Li and Thompson 1981: 305) in (54b) is not the Force head *ne₂*, but the realization of Topic° (cf. Pan 2011b: 90), as witnessed by the well-formedness of (55b) and the acceptability of a comment in the form of a yes/no question with *ma* illustrated below:

(56)   a.   *Zhè běn shū , nǐ yǐjīng   kàn -guo le*
            this CL   book 2SG already see -EXP CLOW
            'This book, you have already read.'

        b.   *Nà   běn shū ne (nǐ kàn guo ma)?*
            this CL   book TOP   2SG see -EXP FORCE
            'And what about that book (have you read it)?'
            (Pan 2011b: 91, [44b])

(57)   *Xiǎo Lǐ qù-guo Aòdàlìyà. Xiǎo Wáng ne (tā yě   qù-guo ma)?*
            Xiao Li go-EXP Australia Xiao Wang TOP 3SG also go-EXP FORCE
            'Xiao Li has been to Australia. And Xiao Wang (has he been there, too)?'

This shows clearly that *ne* in the truncated question is not the force head *ne₂*, but the instantiation of Top° (*contra* Lu Jianming 1984).

    This analysis is confirmed by the co-occurrence of the Top° *ne* with the force head *ne₂* in the spelt out comment part:

(58)   *Wǒ yǐjīng   wèn-le   Zhāngsān.*
            1SG already ask-PERF Zhangsan

            [CPforce[TopP Nǐ ne ([TP nǐ wèn-le   shéi]] ne)?
                2SG TOP   2SG ask-PERF who   FORCE
            'I have already asked Zhangsan. And you (whom have you asked)?'

Furthermore, the prosody of the truncated question 'XP *ne*?' is the same as that of a topic followed by *ne* in an ordinary declarative topic – comment sentence, i.e. either slightly rising or flat, but never falling (cf. Victor Junnan Pan 2011b: 93). In other words, the truncated question *Xiǎo Wáng ne* in (57) above has the same intonational contour as the topic DP *Xiǎo Wáng ne* in (59) below:

(59)   *Xiǎo Lǐ qù-guo Aòdàlìyà. Xiǎo Wáng ne , tā hái méi qù-guo*
       Xiao Li go-EXP Australia Xiao Wang TOP 3SG still NEG go-EXP
       Xiao Li has been to Australia. Xiao Wang, he has not been there yet.'

Last, but not least, given the elliptical nature of the truncated question, it requires a preceding context allowing to retrieve the implicit comment and can therefore not be uttered "out of the blue".[18]

7.2.2.3 The Force head *ba*_{Qconfirmation}: confirmation request or conjecture

A yes/no question with $ba_{\text{Qconfirmation}}$ is not neutral, but implies the speaker's expectation to receive a positive answer to her/his request:

(60)   *Nǐ xiànzài míngbái   le   ba ?*   (Yang-Drocourt 2007: 312)
       2SG now   understand CLOW FORCE
       'You understand now, don't you?'

(61)   *Jīntiān xīngqīsān   ba?*   (Zhu Dexi 1982 : 211)
       today   Wednesday FORCE
       'It is Wednesday today, correct?'

It is this component of confirmation request which explains why $ba_{\text{Qconfirmation}}$ is incompatible with *wh* questions and yes/no question in the 'A-not-A' form, both being genuine information seeking questions.

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18 There is a general consensus in the literature that "out of the blue" sequences of the form 'DP *ne* ?' are only apparent counterexamples (cf. among others Lu Jianming 1984: 108; Lü Shuxiang 2000 [1980]: 412):
(i)   *Ài? Wǒ de yàoshi ne?*   (Yang-Drocourt 2007: 312: [167])
      oh 1SG SUB key   TOP
      'Oh? But my keys (where are they)?'
They also instantiate truncated questions, but with a fixed implicit comment sentence: 'where is?' This sharply contrasts with the multitude of possible comments to be restored for the standard truncated question with a preceding context as discussed above.

(62) * *Shéi míngbái   ba?*
      who understand FORCE

(63) * *Nǐ míngbái   bù míngbái   ba?*
      2SG understand NEG understand FORCE

Lü Shuxiang (2000 [1980]: 57) provides neat minimal pairs where either both *ba*Qconfirmation and *ma* are possible (*modulo* the associated meaning differences) or where only *ba*Qconfirmation is acceptable:

(64) a. *Zhèi zuò fángzi shì xīn gài   de ma?*
          this CL house be new build SUB FORCE
          'Is this house a new one?

      b. *Zhèi zuò fángzi shì xīn gài   de ba?*
          this CL house be new build SUB FORCE
          'This house is a new one, isn't it?'

While (64a) with *ma* is a genuine request for information, this is not the case for (64b) with *ba*Qconfirmation, where a positive answer is expected. Accordingly, only *ba*Qconfirmation, but not *ma* is compatible with adverbs such as *dàgài* 'probably', *yěxǔ* 'perhaps', *shuōbùdìng* 'possibly perhaps':

(65) *Tā dàgài   yǐjīng zǒu -le   ba /*ma?*
      3SG probably already leave-PERF FORCE/ FORCE
      'She has already left, I guess?'

(66) *Xiànzài shuōbùdìng jìngguò-le shí'èr diǎn   le   ba /*ma?*
      now   perhaps   pass -PERF 12   o'clock CLOW FORCE/ FORCE
      'It might very well be past twelve o'clock now?'

When *ba*Qconfirmation occurs with declarative sentences, its conjecturing component results in a weakening of the assertion (cf. Hu Mingyang 1981: 416):

(67) *Nǐ tīngcuò-le   ba*
      2SG mishear-PERF FORCE
      'You must have misheard.'

Finally, sentences (61) and (66) above where *ba*Qconfirmation follows the low C *le* confirms the status of *ba*Qconfirmation as a Force head.

7.2.2.4 The Force head *ba*ᵢₘₚ: advice or suggestion

The SFP *ba*ₗₘₚ is called "advisative" by Chao Yuen Ren (1968: 807) because of its "softening" effect. Accordingly, an imperative containing *ba*ₗₘₚ is understood as less harsh an order than the corresponding imperative sentence without *ba*ₗₘₚ (also cf. Hu Mingyang 1981: 416):

(68)   *Kuài diǎnr zǒu ba!*   (Chao Yuen Ren 1968: 807)
         quick a.bit go FORCE
         'Better hurry up and go!'

(69)   *Bié chàng le   ba!*   (Hu Mingyang 1981: 416)
         NEG sing   CLOW FORCE
         'Better stop singing.'

Again, the rigid ordering with respect to the low C *le* (cf. [69] above) and the Attitude head *ou* (cf. [70] below) confirms the status of *ba*ₗₘₚ as a Force head:

(70)   *Zǒu b'ou [= ba + ou]*   (Zhu Dexi 1982: 208)
         go   FORCE+ATT.fusion
         'You better go!'

Concerning the cases below where *ba*ₗₘₚ occurs with *wh*-questions and 'A-not-A' questions, Zhu Dexi (1982: 211) and Lü Shuxiang (2000 [1980]: 56) agree that these are in fact imperatives and reconstruct an elided *nǐ shuō* 'you say...'. In other words, these examples are to be analysed as on a par with the explicit request in (71) where the verb *gàosù* 'tell' selects the question as its complement clause:

(71)   *[₍ForceP₎[TP Kuài gàosù wǒ [TP tā shàng nǎr   qù-le]] ba]*
                  quick tell   1SG   3SG ascend where go-PERF FORCE
         'Quickly, tell me where he has gone.'
         (Lü Shuxiang 2000 [1980]: 56)

(72)   *[₍ForceP₎ ([TP Nǐ   shuō)[TP[TP zhèyàng zuò] xíng   bù xíng] ba]*
                   2SG say   so   do   possible NEG possible FORCE
         'Is it ok to do it like this?'

Whether it is possible to unify the *ba*ₒ꜀ₒₙfiᵣₘₐₜᵢₒₙ requesting confirmation and the advisative *ba*ₗₘₚ is controversial, and must be left open here. Suffice it to point out that unlike Zhu Dexi (1982, ch. 15 and 16) and Lü Shuxiang (2000 [1980])

whom I have followed here in distinguishing two different *ba*'s, Lu Jianming (1985: 244) is in favour of treating them as a single item. According to him, there is no intonational difference between $ba_{\text{Qconfirmation}}$ and ba_{IMP} and the different interpretations obtained rely solely on the context.

7.2.2.5 Interim summary

Though I have kept Rizzi's label *ForceP* for the second layer of C-elements above the low CP, only the SFP *ma* seems to really *encode* Force, *viz.* interrogative force, turning a declarative clause into a yes/no question. The other C-elements are better characterized as "force-related" in the sense that they modulate the existing force of the sentence. For example, *ne₂* indicates that the question at hand is a "follow-up" and must be seen as a continuation of the preceding context, and $ba_{\text{Qconfirmation}}$ encodes the speaker's expectation to obtain a positive answer to her/his question. Ba_{IMP} finally expresses the advisative character of the imperative at hand and distinguishes it from the corresponding non-mitigated order associated with the absence of ba_{IMP}.

7.2.3 AttitudeP: C₃ heads expressing speaker/hearer related dimensions

The SFPs instantiating AttitudeP involve both speaker and hearer, via the speaker's assumptions concerning the beliefs of the hearer. Again, Chinese is not unique in this respect, given that e.g. Japanese (cf. Endo 2007: 175–198) as well as Romance and Germanic languages likewise display particles in the sentence periphery encoding properties of the speaker-hearer interaction. Examining Romanian and West-Flemish, Haegeman and Hill (2013) postulate the projection DiscourseP, equivalent in function to AttitudeP in Chinese.[19] Importantly, the characteristics of SFPs realizing DiscourseP established by Haegeman and Hill (2013) also hold for Attitude SFPs in Chinese.

First, AttitudeP does not concern nor affect the truth value of the proposition at hand. This contrasts with the SFPs instantiating ForceP, where as we have seen $ba_{\text{Qconfirmation}}$ conveys the speaker's belief that the proposition is true, and *ma* is a request as to the truth value of the proposition (yes/no). It is correct that a SFP such as the advisative ba_{IMP} also conveys the speaker's (friendly) attitude, but at the same time this SFP is linked to a particular sentence type, i.e.

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19 Since nothing is said about C-elements heading the (lower) projections ForceP and low CP, I assume that neither Romanian nor West-Flemish have SFPs realizing these two projections.

the imperative. Furthermore, its status as Force head is confirmed by its obligatorily preceding Attitude SFPs such as *ou* (cf. [70] above). As for low C, *láizhe* 'recent past' was shown to be incompatible with TP-internal negation, implying its selecting asserted situations only (cf. sections 7.2.1.1 and 7.2.1.4 above). Attitude SFPs are thus fundamentally distinct from both low C and Force heads, an observation already made by Zhu (1982: 208), although not elaborated upon.

Second, Attitude SFPs indicate the speaker's commitment to the sentence content; they are interactional and imply the obligatory presence of a hearer (hence would be infelicitous in broadcasts).

Third, Attitude SFPs are deictic, i.e. they are directly correlated with the speech act, but do not require a preceding utterance as "trigger". Finally, Haegeman and Hill (2013) concede that it is difficult to determine exactly the interpretive properties of Attitude SFPs, even though their semantic import is clearly discernible when comparing sentences with and without them. This leads to the fourth characteristic, which is the optionality of Attitude heads.

Note that the following only presents a small selection of Attitude SFPs, but representative enough to illustrate the type of semantics they contribute.

7.2.3.1 The Attitude head *ne₃* and its counterpart *bàle*

After the low C *ne₁* and the Force head *ne₂*, there is also an Attitude head *ne₃* expressing exaggeration or conveying a boasting tone (cf. Zhu Dexi 1982: 213):

(73)   *Tā huì kāi fēijī   ne!*
         3SG can drive airplane ATT
         '(Imagine) he can fly an airplane!'

Zhu (1982: 213) provides a neat minimal pair (a slightly changed version of which is given in [74]–[75] below) where *ne₃* alternates with *bàle*, the latter being paraphrasable as 'that's all there is to it' and having the effect of "downplaying", which is exactly the opposite of the boasting tone mediated by *ne₃*:

(74)   *Tāmen yào wǔbǎi kuài qián   ne! Bù shì ge xiǎo   shùmù!*
         3SG   want 500   CL   money ATT NEG be CL small sum
         'They want (as much as) 500 dollars! That's not a small sum!'

(75)   *Tāmen yào wǔbǎi kuài qián   bale! Méi yǒu shénme liǎobùqǐ!*[20]
        3SG   want 500 CL   money ATT NEG have what   extraordinary
        'They (only) want 500 dollars! That's nothing extraordinary!'

The semantic import and the syntactic context of *ne₃* is clearly different from that of both *ne₁* and *ne₂* and warrants its status as an Attitude head. (Recall that the Force head *ne₂* requires a complement in the form of a *wh*-question or an 'A-*bù*-A' question, and that in certain cases the low C *ne₁* is obligatory for sentences containing a verb suffixed by -*zhe*, unlike the always optional Force and Attitude heads *ne₂* and *ne₃*; cf. section 7.2.1.3 above).[21] This further confirms the non-unitary approach to *ne* adopted here, contrasting with the majority of proposals postulating a single *ne*. As already demonstrated for *ne₁* and *ne₂*, a unifying analysis is excluded, because it simply cannot account for the different orders observed: the low C *ne₁* must precede Force heads such as *ba*_Qconfirmation and *ma* (cf. [40] and [41] above), whereas the Force head *ne₂* permutes with other Force heads and must follow low C such as *le* (cf. [58] above). In addition, the semantic characterization within a unifiying analysis of *ne* fails as well. For example, according to Hu Mingyang (1981) and Wu Guo (2005), *ne* has the general function of "hearer engagement" and involves "negotiating the shared

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20 The Taiwan Mandarin equivalent of the Attitude head *bàle*, i.e. *ěryǐ*, seems to be a low C, because it can occur in embedded contexts (cf. section 7.3.2 below):

(i)   [_TP Wǒ bù   shì [[hē   chá] ěryǐ]]]   (Erlewine 2010: 23; [10])
           1SG NEG be   drink tea   CLOW
      'I don't exclusively drink tea (I also drink other beverages).'
      [Excluded: 'I only don't drink tea (but I drink everything else)'.]

In (i), the negated matrix predicate *bù shì* 'not be' has scope over *ěryǐ* (roughly translatable as 'only' here), because the latter is part of the clause embedded under *shi* 'be'. (i) thus clearly contrasts with (ii) where *ěryǐ* is construed with the only available clausal domain, i.e. *wǒ bù hē chá* 'I don't drink tea':

(ii) [_ClowP [_TP Wǒ bù   hé   chá] ěryǐ]   (Erlewine 2010: 23; [9])
                1SG NEG drink tea   CLOW
      'I only don't drink tea (but I drink everything else).'
      [Excluded: 'I don't exclusively drink tea (I also drink other beverages).']

21 Though for semantic reasons it is difficult to construe examples where *ne₃* is preceded by a Force head, cases where *ne₃* follows a low C are more easily obtained:

(i)   [_AttP [_TP Tā gāngcái hái zài zhèlǐ] láizhe] ne]!   (Victor Junnan Pan 2012, ex. [23])
             3SG just   still at here CLOW ATT
      'Look, he was still here a moment ago!'

The presence of *láizhe* excludes identification of *ne* as a low C, and the non-interrogative nature of the sentence likewise rules out the analysis of *ne* as the Force head *ne₂*. *Ne* is therefore a realization of the Attitude head *ne₃*.

common ground" (Wu Guo 2005: 47); as far as I can see, "hearer engagement" and "negotiating the shared common ground" can qualify as features common to all Attitude SFPs.[22] For William C.J. Lin (1984) and Constant (2011), all instances of *ne*, SFPs and the head Top° alike, are said to involve contrastiveness, *modulo* the fact that for Constant (2011: 15) "the durative aspect marker ne_{ASP}", i.e. ne_1 instantiates a second *ne*, because it cannot be analysed in terms of his "contrastive topic (CT) operator ne_{CT}" (cf. section 7.2.1.3 above).

Again, this overall analysis of *ne* in terms of contrastive topic is not borne out by the data, neither by the instantiations of the different subprojections in the split CP (low CP, ForceP, AttitudeP) nor by the data for the topic head *ne*. Recall from section 7.2.2.2 that the Force head ne_2 indicates the "follow-up" character of the question (as opposed to an "out of the blue" question), which cannot be subsumed under contrastiveness. Concerning the allegedly generalized contrastive value of Top° *ne*, a set of counterexamples that comes to mind immediately are adjuncts in TopP as illustrated in (76) (cf. chapter 6.1.2 above for more examples of this type):

(76)   [$_{ClowP}$[$_{TopP}$ *Qíshí*   *ne* [$_{TP}$ *tā hái zhùzài zhèr]] ne]*
                    actually TOP   3SG still live   here   CLOW
         'In fact, he still lives here.'

The co-occurrence of the topic head *ne* with the low C *ne* in (76) presents another problem for a unifying analysis, given that both *ne* are claimed to be instantiations of the same category.[23]

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22 Wu Guo (2005: 47–48) from the outset excludes *ne* in questions from his study and concentrates on *ne* in statements. The issue whether the *ne* in statements is the same *ne* as that in question is relegated to future research. Given this eliminating procedure, the scope of what he describes as the "general" function of *ne* turns out to be rather restricted. Also recall from section 7.2.1.3 that in certain syntactic contexts, the low C ne_1 (in declarative, non-interrogative contexts) is obligatory, another difference with respect to the Attitude head ne_3.

23 Sentences such as (i) with both Top° *ne* and the Force head ne_2 cannot be handled by the uniform analysis, either; note, though, that (i) was not judged acceptable by all of the native speakers consulted:

(i)   [$_{CPforce}$[$_{ClowP}$[$_{TopP}$ *Nǐ*   *ne* [$_{TP}$ *nǐ wèn shéi] le*   ] ne]?*
                        2SG TOP   2SG ask who   CLOW   FORCE
        'And you, whom have you asked?'

7.2.3.2 The Attitude head *ma* and its counterpart *ei*

The Attitude head *ma* (henceforth *ma*$_{Att}$) implies that the speaker presupposes the hearer *not* to be up to date and provides a correction of the hearer's belief, conveying something like 'this is self-evident', 'you should know', 'don't you see?' (cf. Chao Yuen Ren's 1968: 801 term "dogmatic assertion"):

(77) *Tā bù shì Lǎolǐ ma? Ràng tā jìnlái   ma*$_{Att}$
      3SG NEG be Laoli FORCE let   3SG come.in   ATT
      'Isn't that Laoli? Let him come in. (Why do I have to tell you?)'
      (Lü Shuxiang 2000 [1980]: 375)

(78) *Wǒ shuō jīntiān shì xīngqīsān   ma*$_{Att}$*! Nǐ shuō bù shì!*
      1SG say today be Wednesday ATT   2SG say NEG be
      'I say it's Wedndesday today! You say it isn't!'
      (Zhu Dexi 1982: 213)

The Attitude head *ma*$_{Att}$ is clearly distinct from the Force head *ma* encoding yes/no questions, as generally acknowledged in the literature (cf. among others Chao Yuen Ren 1968: 800–801, Zhu Dexi 1982: 211–213, Lü Shuxiang 2000 [1980]: 375–376) and nicely illustrated by (77), where both SFPs occur in successive sentences. This straightforwardly invalidates Li Boya (2006: 64–65) who postulates a single *ma* "mark[ing] a high degree of the strength of the assertive or directive force".[24]

The Attitude head *ei* is presented as counterpart of *ma*$_{Att}$ by Zhu Dexi (1982: 213), insofar as with *ei*, the speaker assumes the other person to *be* up to date concerning the matter at hand, but nevertheless issues a reminder:

(79) *Jīntiān xīngqīsān   ei!*
      today   Wednesday SFP
      Nǐ bié wàngle xiàwǔ   děi   shàng kè   ei!
      2SG NEG forget afternoon must attend class SFP

---

24 Chao Yuen Ren (1968: 801) explicitly addresses the problem of Force head *ma* vs Attitude head *ma* and notes the latter as *me*: "Because particles are in the neutral tone and unstressed, the low vowel *a* and the midvowel *e* are indistinguishable. However, in questions ending in *ma* [i.e. the Force head; WP], the sentence intonation is usually fairly high and ends in a slight drawl. It is therefore distinguishable from P5 *me* [i.e. the Attitude head; WP] below, which is always short." Since the native speakers consulted pronounced the Attitude head as *ma*, I do not follow Chao Yuen Ren here, but note it as *ma*$_{Att}$. Note that the Force head *ma* and the Attitude head *ma* are written differently.

'Today is Wednesday (mind you)! Don't forget you have classes in the
 afternoon!'
(slightly changed example from Zhu Dexi 1982: 213)

7.2.3.3 The Attitude head *zhene*

The SFP *zhene* acting as an intensifier for sentences with stative predicates (cf.
Lü Shuxiang 2000 [1980]: 667) is rarely mentioned in the studies on SFPs (but
cf. Li Wenshan 2007). This is probably due to the fact that many consider it a
feature of Northern Chinese and that in the standard language it is not encoun-
tered in all of its uses:

(80)　　*[ClowP [TP Běijīng kǎoyā　　 yǒumíng] zhene]*
　　　　　　　Beijing　roast.duck famous　ATT
　　　　'The roast Peking duck is extremely famous.'
　　　　(Lü Shuxiang 2000 [1980]: 667)

It is nevertheless included here because, as pointed out by Zhu Dexi (1982: 208),
the Attitude head *zhene* is often confused with the sequence of the verbal suffix
-zhe followed by the low C *ne₁* (cf. [81a]):[25]

(81)　　a.　*[ClowP [TP Tā　chàng-zhe] ne]]*
　　　　　　　　　3SG sing -DUR　CLOW
　　　　　　'He is singing.'

　　　　b.　*[ClowP [TP Tā　chàng-zhe gē　] ne]]*
　　　　　　　　　3SG sing -DUR song CLOW
　　　　　　'He is singing songs.'

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25 This is the case for the only example with *zhene* provided by Li and Thompson (1981), the
sentences (45), (46) in Paris (1981: 400), and the sentences (13), (16) in Wu Guo (2005: 62):
(i)　*Nèi ge fángjiān hēi　 zhe ne*　　　(Li and Thompson 1981: 222, [151];
　　 that CL room　 black INT REX　　　 their glosses and translation)
　　 'That room is pretty dark.'
Li and Thompson (1981) visibly misanalyse the low C *zhene* as a special "intensifier" use of the
combination of the verbal suffix *-zhe* plus SFP *ne*, the latter labelled "response to expectation"
(REX). Note that Chao (1968: 249) gives nearly the same example with the adjective *hēi* as
illustration of the use of the SFP *zhene*:
(ii)　*Xié　 hēi　 zhene*
　　 shoe　black CLOW
　　 'The shoes are pretty black.'

In the presence of an object though, no misparsing is possible, *-zhe* as verbal suffix preceding the object (cf. [81b]), and *zhene* as SFP following it (cf. [82]):

(82)   [_{ClowP}[_{TP} *Wǒ xiǎng nǐ*] *zhene*]   (Chao 1968: 248)
                 1SG think 2SG ATT
           'I miss you terribly.'

As shown in (82) *zhene* is not restricted to sentences with adjectives, but combines with stative predicates in general.

It is important to note that *zhene* is unacceptable when the predicate is negated (cf. [83]) or modified by a degree adverb (cf. Lü Shuxiang 2000 [1980]: 667); nor does *zhene* allow for a derived adjective as predicate (cf. [84b]).[26]

(83)   *Wǒmen (*bù /*tèbié)   kāixīn zhene*
           1PL   NEG/ particularly happy CLOW
           'We're extremely happy.'
           (Li Wenshan 2007: 62, [6b], [7b])

(84)   a.   *Háizi pàng zhene*
                  child fat   CLOW
                  'The child is terribly fat.'

          b. * *Háizi pànghūhū   zhene*
                  child plump   CLOW

The SFP *zhene* is analysed as an Attitude head, because it not only indicates a maximal degree, but also corrects the interlocutor's presupposition underestimating the property under discussion. (85) implies that the interlocutor had doubts about Zhangsan's size, for example in a context where an additional basketball player is needed:

(85)   *Zhāngsān kě   gāo zhene!*
           Zhangsan indeed tall   ATT
           '(But) Zhangsan is extremely tall!'

---

26 This observation ties in nicely with the distinction argued for in chapter 5.3 above between *simple adjectives* and *derived adjectives*, the latter subsuming partially reduplicated adjectives such as *pànghūhū* 'plump, chubby'.

Note that *kě* is a speaker-oriented adverb emphasizing the statement, not a degree adverb. Finally, *zhene*'s sensitivity to TP-internal material (such as negation and degree adverbs) seems to indicate that not only low Cs, but higher heads as well may have access to TP, provided there are no intervening projections.

7.2.3.4 The Attitude head *a*

To conclude the section on Attitude heads, I briefly discuss the SFP *a*. This SFP has rather complicated morphophonemics depending on the preceding word, which is often reflected in different transliterations: *ia, (u)a, (n)a, (ng)a* etc. (cf. Chao Yuen Ren 1968: 803, Zhu Dexi 1982: 212, Yang-Drocourt 2007: 192–195 for detailed discussion). For ease of exposition, I gloss over these phonological alternations and use the transliteration *a* throughout.

The SFP *a* is rather ubiquitous and occurs with all kinds of sentence types (declaratives, questions, imperatives, exclamatives), which makes its semantic characterization very difficult. Scholars agree that *a* conveys the personal implication of the speaker and has a general softening effect; the different interpretations observed for *a* are then due to the different sentence types it combines with (cf. among others Chao Yuen Ren 1968: 803–806; Zhu Dexi 1982: 212, Li and Thompson 1981: 313–317, Beutel 1988). For example, Chao Yuen Ren (1968: 804) observes that a question with the SFP *a* is less blunt than one without it, an effect which can be paraphrased as 'by the way' or 'excuse me' etc.

(86) *Nǐ   míngtiān chūqù   bù   chūqù   a?*
       2SG tomorrow go.out   NEG go.out   ATT
       '(By the way) are you going out tomorrow?'

Likewise, an imperative with the SFP *a* has less the flavour of a command than an imperative without it (though according to Chao Yuen Ren [1968: 804] the softening effect with *a* is less strong than with the advisative *ba*IMP discussed in section 7.2.2.4 above):

(87) *Shuō a,   bié hàipà   a!*
       say   ATT NEG be.afraid ATT
       'Say it, don't be afraid!

In an exclamative, *a* expresses the emotion of the speaker which depending on the sentence meaning can be anger, astonishment, enthusiasm etc.:

(88)   *Nǐ kan a, biànhuà duō   dà a!*   (Yang-Drocourt 2007: 311)
       2SG see ATT change   much big ATT
       'Look, how much everything has changed!'

7.2.4 Summary and synoptic table of the split CP in Chinese

The preceding sections have provided extensive evidence for the existence of a three-layered CP above TP in Chinese: ClowP < ForceP < AttitudeP.

(89)   The three classes of root complementisers (selection)

C_1 (low C)	C_2 (Force)	C_3 (Attitude)
le currently relevant state	*ba*_{IMP} (advisative *ba*)	*a* softening
láizhe recent past	ba$_{Qconfirmation}$	*bàle* understatement
ne₁ continuing situation	*ma* yes/no question	*ei* gentle reminder
....	*ne₂* follow-up question	*ma* dogmatic assertion
	....	*ne₃* exaggeration
		ou impatience
		zhene intensifier
		....

N.B. The semantic values indicated for each SFP are approximations only.

The strict ordering observed by Zhu Dexi (1982, ch. 16) for the three classes of SFPs can be easily recast as a split CP à la Rizzi, *modulo* the addition of the projection AttitudeP above ForceP. Importantly, studies on Romance and Germanic languages within Rizzi's split CP approach independently argue for the necessity of such a speaker/hearer related projection absent from Rizzi's original hierarchy.

   SFPs are clearly heads, because they impose selectional restrictions on their clausal complement (such as declarative or interrogative sentence type). In the case of low C, the acceptability of a given TP as complement also depends on the properties of the extended verbal projection such as its aktionsart.

   The detailed study of *ne* has illustrated several problems encountered in the analysis of SFPs in general, among them the homophony between C-elements instantiating different projections and the homophony between a C-element and the realization of Top°. As a result, four different *ne*'s have to be identified, *viz.* the low C *ne₁*, the Force head *ne₂* and the Attitude *ne₃*, on the one hand, and the head of Topic Phrase *ne*, on the other. Likewise, there are two SFPs *ma* realizing ForceP or AttitudeP, respectively. Homophony between a C-element and a

Top° is not restricted to *ne*, either, but e.g. also holds for *le*, *ma* and *a* (cf. among others Chao 1968: 796, §8.5.2; Lü Shuxiang 2000 [1980]: 358, 376). Finally, SFPs such as *ba*_{IMP} and *ba*_{Qconfirmation} reveal another difficulty, namely the homophony between SFPs belonging to the same projection, in this case ForceP.

The decision to be made for homophonous items is further complicated by the interaction between the SFPs, the sentence meaning itself, the sentence intonation and the context, all of which contribute to the interpretation obtained. As a consequence, it is not always easy to pin down the meaning component provided by the SFP itself. Besides, the use of SFPs, especially those realizing AttitudeP, is also subject to individual and regional differences which still remain to be elucidated. (In general, Northern speakers seem to use SFPs more frequently than Southern speakers.) These caveats notwithstanding, it is evident that SFPs are an integral part of the syntax and as such subject to syntactic constraints, the most visible being the hierarchy of the different projections reflected in the rigid order 'TP < low CP < ForceP < AttitudeP'.

7.3 The root vs non-root asymmetry in the Chinese complementiser system

So far I have limited myself to examining SFPs in matrix sentences, i.e. root contexts. Accordingly, the split CP 'Low CP < ForceP < AttitudeP' holds for root contexts only. This is important because – as to be discussed in the present section – most C-elements in Chinese are barred from embedded, non-root contexts. More precisely, only low C may under certain circumstances occur in embedded contexts, whereas Force and Attitude heads are completely excluded here and acceptable in root contexts only. In addition, Chinese also has exclusively non-root C, *viz. dehuà* in conditional clauses and *de* in the propositional assertion construction (cf. Paul and Whitman 2008). Note that the literature on the Chinese C-system (from Lisa Lai-Shen Cheng 1991 up to the more recent studies by Li Boya 2006, Xiong Zhongru 2007, Hsieh and Sybesma 2008, Huang, Li and Li 2009: 34–35, among others) has so far not acknowledged the *systematic* character of the root/non-root asymmetry and has at best stated the root-only distribution as the idiosyncrasy of individual SFPs, as in the case of the Force heads *ma* (cf. Li and Thompson 1981: 557, Tang Ting-chi 1988: 363) and *ne* (cf. Cheng Lisa Lai-Shen 1991, Y.-H. Audrey Li 1992: 153).

7.3.1 Root-only complementisers

As noted by Li & Thompson (1981: 556–557) and (Tang Ting-chi 1988: 363), the yes/no question particle *ma* cannot be part of an embedded clause, but must always be construed as belonging to the matrix sentence. This is straightforward in (90a): a sentential subject cannot contain *ma*; instead, the 'A-not-A' question form must be used here (cf. [90b]):

(90)   a. *$[_{TP}\,[_{ForceP}[_{TP}$ *Ākiū lái*] *ma*]   *méi yǒu guānxi*]
                    Akiu come   FORCE NEG have relation

   b. $[_{TP}\,[_{TP}$ *Ākiū lái*   *bù lái*]   *méi yǒu guānxi*]
               Akiu come   NEG come   NEG have relation
            'Whether or not Akiu comes doesn't matter.'

By contrast, in (91a), where the final position of the root clause coincides with the final position of the clausal complement, this 'root only' constraint must be deduced from the interpretational possibilities. In (91a), *ma* can only question the root clause, not the clausal complement. In the case of an interrogative clause as complement (cf. [91b]), again only the 'A-not-A' question is acceptable (cf. [91b]).[27]

(91)   a. $[_{ForceP}[_{TP}$ *Tā bù zhīdao* $[_{TP}$ *Ākiū lái*]] *ma*]?
                    3SG NEG know   Akiu come   FORCE
         'Doesn't she know that Akiu is coming?'
         [Excluded: 'She doesn't know whether or not Akiu is coming.']
         (cf. Li and Thompson 1981: 557; Tang Ting-chi 1988: 365)

   b. $[_{TP}$ *Tā bù zhīdao* $[_{TP}$ *Ākiū lái*   *bù lái*]]
               3SG NEG know   Akiu come   NEG come
            'She doesn't know whether Akiu is coming or not.'

The same root-only constraint holds for other Force heads such as *ne₂* (cf. Tang Ting-chi 1988: 363) and for Attitude heads (cf. Victor J. Pan 2012):

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27 The root-only constraint for *ma* as Force head sheds doubt on Aldrige (2011) who postulates an embedded position as diachronic source for *ma*. Against the backdrop of the *Conservancy of Structure Constraint* (cf. Whitman 2000, Whitman and Paul 2005), which requires the conservation of the original hierarchical c-command relations in the output structure, this is an impossible diachronic scenario.

(92) *[TP [TP Ākiū lái   bù lái   (*ne)] méi yǒu guānxi]*
        Akiu come NEG come FORCE NEG have relation
        'Whether or not Akiu comes doesn't matter.'

(93) a. *Wǒmen yīqǐ   qù ba_IMP*
          1PL   together go   FORCE
          'Let's go there together.'

     b. *Wǒmen yīqǐ   qù (*ba_IMP) de yīyuàn   bù yuǎn*
          1PL   together go   FORCE SUB hospital NEG far
          'The hospital where we went together is not far.'
          (Victor J. Pan 2012: 9, [46])

(94) *[TP[TP Jīntiān xīngqītiān (*bàle)] méi yǒu   guānxī]*,
        today Sunday   ATT   NEG have relation
     nǐ háishi yào xuéxī
     2SG still   must study
     'It doesn't matter that it's Sunday today, you have to study anyway.'

The unacceptability of Force heads points to the lack of the relevant projection in embedded contexts, because an interrogative sentence *per se* is not excluded, as evidenced by the well formedness of sentential subjects and clausal complements with A-*bù*-A questions. *A fortiori*, there can be no projection AttitudeP, either; in addition, embedded contexts seem to be semantically incompatible with speaker and hearer-related dimensions conveyed by Attitude heads, such as the downplaying effect associated with *bàle* in (94).

7.3.2 Low C in root and non-root contexts

The situation for low C is somewhat more complicated. Let us first look at the set of examples where a low C *is* acceptable in embedded contexts such as clausal-complements (cf. [95]), sentential subjects (cf. (96)), noun complement clauses (cf. [97]) and relative clauses (cf. [98]):

(95) *[TP Nǐ wèishénme méi gàosù wǒ [ClowP[TP tā bù qù Aòdàlìyà] le]]?*
        2SG why   NEG tell 1SG   3SG NEG go Australia CLOW
     'Why didn't you tell me that she no longer wants to go to Australia?'

(96) *[TP [ClowP[TP Tā bù qù Aòdàlìyà] le] bù suàn shénme xīnwén]*
          3SG NEG go Australia CLOW NEG count what   news
     'That she no longer wants to go to Australia is no real news.'

(97) a. *[DP [ClowP[TP Bālí xià xuě] le] de xiāoxi]*
              Paris fall snow CLOW SUB news
        'the news that it is snowing in Paris'

     b. *[ClowP[TP Bālí   xià xuě] le]*
              Paris   fall snow CLOW
        'It is snowing in Paris.'

(98) #*[DP[ClowP[TP Gāngcái dǎ diànhuà] láizhe] de rén]   dàodǐ shì shéi?*
              just   strike phone CLOW SUB person in.fact be who
     'Who in fact was the person that called just now?'
     (Victor J. Pan 2012, ex. [41])

Note first that the acceptability of *láizhe* in non-root contexts (cf. [98]) is subject to variation (indicated by '#'), because (98) was accepted only by speakers from Northern China. By contrast, the judgements for *le* in non-root contexts are more homogeneous. In (97a) the presence of *le* was accepted and for some speakers even preferred in order to "anchor" the event, on a par with the function of *le* in the matrix clause (cf. [97b]). Concerning sentences (95) and (96), the presence or absence of *le* is associated with an interpretational difference for the embedded clauses, *viz* 'she no longer wants to go to Australia' (with *le*) vs 'she doesn't want to go to Australia' (without *le*). These sentences thus contrast with example (99a) given by Ross (1983) which was at the origin of the generalization that SFPs are barred from embedded contexts:

(99) a. *[DP[TP Zuótiān   chī yúròu (*le)] de rén]   dōu bìng-le.*
              yesterday eat fish   CLOW SUB person all ill -PERF
        'The people who ate fish yesterday are all sick.'
        (slightly changed example [29] from Ross 1983: 235)

     b. *[ClowP[TP Wǒmen zuótiān   chī yúròu] le]*
              1PL   yesterday eat fish   CLOW
        'We ate fish yesterday.'

Given the acceptability of (95) – (98) it is evident that this generalization is too strong. The decisive factor seems to be whether the presence of the low C in-

duces a meaning difference, which is the case in my examples, but not in that by Ross (1983). In addition, in (99a) *le* is not required to "anchor" the event, either (whereas this is the case in [97a]), given the presence of the temporal adverb *zuótiān* 'yesterday'.

Note in this context that Chinese lacks a C comparable to *that* in English heading clausal complements of verbs (cf. [100], [101]) and sentential subjects (102) (also cf. [96] and [97] above):[28]

(100) *Tā gāngcái gàosu wǒ [Ākiū yǐjīng   zǒu -le]*
       3SG just   tell   1SG Akiu already leave-PERF
       'He just told me *that* Akiu already left.'

(101) *Tā shuō [Ākiū dé   -le   jiǎng]*
       3SG say   Akiu obtain-PERF award
       'She told me <u>that</u> Akiu had won a prize.'

(102) *[Ākiū dé   -le   jiǎng] shǐ   wǒmen tèbié   gāoxìng*
        Akiu obtain-PERF award make 1PL   particularly   happy
       'The fact *that* Akiu won a prize made us very happy.'

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28 This contrasts with the claim often encountered in the literature that a grammaticalized form of the verb *shuō* 'speak' instantiates such a complementiser (cf. Fang Mei 2006, Hsieh and Sybesma 2008 among many others):

(i)   *Wǒ zǒngshì juéde shuō, shēnghuó lǐ quē -le   diǎn shénme*
       1SG always feel   SHUO life   in miss-PERF a.bit something
       'I have always had the feeling that something is missing in my life.'
       (Fang Mei 2006: 109, [1])

However, if *shuō* were really a complementiser, it should form a constituent with the clause as its complement and remain as a block in the afterthought construction, a prediction not borne out by the data (cf. [ii]). By contrast, some speakers accept for *shuō* to follow the verb in (ii) suggesting that the verb and *shuō* form a compound (cf. Xu and Langendoen 1985: 2, note 5):

(ii) *[(*Shuō) shēnghuó lǐ quē -le   diǎn shénme], wǒ zǒngshì juéde (#shuo)*
        SHUO life   in miss-PERF a.bit something 1SG always feel   SHUO
       'That something is missing in my life, I have always thought so.'

Also note that a pause (indicated by a comma by Fang Mei herself) is natural after *shuō* in (i), but not between *shuō* and the preceding verb. Last, but not least, in the Chinese literature, none of the numerous papers on *shuō* or its equivalent in other Sinitic languages has ever provided well-formed examples where this alleged complementiser *shuō* heads a sentential subject:

(iii) *[*Shuō) shēnghuó lǐ quē -le   diǎn shénme] zhēn kěxì*
        SHUO   life   in miss-PERF a.bit something really pity
       'That something is missing in my life is really a pity.'

Concerning the Chinese equivalents of so-called "subordinating conjunctions" in English such as *because, although* etc. examined in chapter 8.3.4.3 below, they are shown to represent a heterogenous group which is, however, clearly different from the C-elements realized by SFPs.

To sum up, only low C can occur in both root *and* non-root contexts; the acceptability in non-root contexts is, however, subject to constraints whose precise nature still needs to be determined.

7.3.3 The exclusively non-root C *de* and *dehuà*

The issue of exclusively non-root C has not received any attention in the literature, which is not surprising insofar as the fundamental character of the root vs non-root asymmetry in the Chinese C-system has not been acknowledged, either. It is correct that Lisa L.-S. Cheng (1986) proposed an analysis of the subordinator *de* in relative clauses as C. However, she did not relate this claim to the C-status of SFPs in general, and accordingly did not discuss at all the root/non-root character of the alleged C *de*. Nor did she provide arguments for its C-status, but took it for granted on the basis of its analysis as C in C.-T. James Huang (1982).[29] In fact, Lisa L.-S. Cheng (1986: 319) had to admit the "non-selective" nature of *de* in order to maintain her C-analysis for *de*, given that not only relative and complement clauses, but any kind of modifier XP (NP, DP, QP, AdpositionP, AdjectiveP) is compatible with *de*: 'XP *de* NP' (cf. chapter 5.2.3 above).[30] Since upon careful analysis *de* turns out *not* to be a C, but the instan-

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29 Lisa L.-S. Cheng (1986: 316) mentions C.-T. James Huang's (1982) thesis without giving any precise reference. Upon perusal, one finds two places where potential C-elements in Chinese are discussed. In chapter 2.5.2.1, C.-T. James Huang (1982: 85–86) evokes C status for the *de* with relative clauses, *modulo* its existence on the level of PF (phonetic form) only, thus not interacting with processes in syntax or LF (logical form). He furthermore proposes as null hypothesis that "every clause may be headed initially by a COMP in Syntax and LF, whether that COMP has lexical content [or not]" (p. 86). Sentential subjects in Chinese illustrate a case of a covert COMP (chapter 6.1, p. 460). Recall that (matrix) SFPs are not examined in C.-T. James Huang (1982).

30 Lisa L.-S. Cheng (1986: 319), states that "a complementizer, being a head, may or may not select a particular type of complement or specifier. English is an example of a complementizer selecting only I" [=IP; WP] as its complement. [...] *de*, if it is a complementizer in Mandarin, places no restrictions on the category of its complement". She contents herself with this reformulation of the facts and does not pursue the issue any further.

tiation of different heads in the extended nominal projection, among them light *n* and D (cf. Paul 2012; to appear), it is not discussed here any further.[31]

7.3.3.1 The exclusively non-root C *de*

One of the two non-root C identified so far is the *de* in the so-called *propositional assertion construction* (cf. Paul and Whitman 2008): the copula *shì* 'be' selects a complement headed by *de* which in turn takes as its complement a non-finite TP, in other words, *de* is obligatory here. As indicated by the addition of 'it is the case that…' in the translation, this construction is used in order to strengthen the assertion of the sentence as a whole:

(103)   *Wǒ$_i$ shì* [$_{CP(-root)}$[t_i *cónglái bù chōu yān*] *de*]
      1SG be   ever NEG inhale smoke C(-root)
      '(It is the case that) I have never smoked.'

(104)   *Tā$_i$ shì* [$_{CP(-root)}$[t_i *yídìng huì* [$_{PP}$ *duì*   *nǐ*] *hǎo yī bèizi*]   *de*]
      3SG be   certainly will   towards 2SG good 1 generation C(-root)
      '(It is the case that) he will certainly be good to you for an entire
       lifetime.'
      (Li, Thompson, and Zhang 1998: 94,[C]; bracketing supplied)

(105   [$_{TopP}$[$_{DP}$ *Zhèi ge dōngxī*]
            this   CL thing
    [$_{TP}$ *tā$_i$ shì* [$_{CP(-root)}$[t_i *yīnggāi bān*   *-de -dòng t$_{DP}$*] *de*]]][32]
       3SG be   ought remove-able-move C(-root)
    'This thing, he should indeed be able to move it.'

The non-finite character of the TP selected by the non-root C *de* is evidenced by the obligatory raising of the subject to the matrix subject position, i.e. preceding

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31 In contrast to the head-final CP, *de* projects a head-initial phrase DeP, selecting the NP to its right as its complement and hosting the modifier XP in its specifier: [$_{DeP}$ XP [$_{De'}$ *de* NP] (cf. chapter 8.5.1 below). While in Chinese the different heads in the extended nominal projection are all spelt out as *de*, English realizes them as different items, i.e. *of* and the so-called possessive *'s*. As pointed out by Whitman (2001), the English possessive *'s* and *de* have in common to depend phonologically on the XP in their specifier, which in the case of *de* has often been mistaken as reflecting syntactic constituency.
32 As can be seen from the gloss 'able', the *de* in the verbal compound *bān-de-dòng* 'be able to move' is a completely different word, not to be mistaken for the non-root C *de*.

the copula *shì*, as indicated in (103) – (105). Furthermore, topicalization of a phrase from the non-root CP in the propositional assertion construction is possible as well (cf. [105], [106]). This clearly contrasts with the non-extractability from a relative clause (cf. [107b]), irrespective of the presence or absence of the NP-complement of *de*, here *rén* 'person' (For further discussion, cf. Paul and Whitman 2008: section 6.3). These differences in extraction confirm the analysis of *de* in the nominal projection 'XP *de* NP' as a nominal head, not a non-root C:

(106) [*TopP*[*PP* *Duì*   *nǐ*] [*TP* *tā* *shì* [*CP(-root)*[*yīdìng*   *huì* *tPP* *hǎo*
            towards 2SG   3SG be   certainly will   be.good
       yī bèizi]   *de*]]]
       1 generation C(-root)
       '(It is the case that) he will certainly be good to you for an entire
       lifetime.'

(107) a. *Tā* *hèn* [*DP* [*TP* *Øi* [*PP* *duì*   *nǐ*] *huì* *hǎo*   *yī bèizi*]
            3SG hate   towards 2SG will be.good 1 lifetime
           de (*réni*)]
           SUB person
           'He hates people/those who will be good to you for an entire
            lifetime.'

       b. * [*TopP*[*PP* *Duì*   *nǐ*][*TP* *tā*   *hèn* [*DP*[*TP* *Øi* *huì*   *tPP* *hǎo*
                 towards 2SG 3SG hate   will   be.good
           yī bèizi   *de*] (*rén*)]]]
           1 lifetime SUB   person
           (*'[To you]i, he hates people/those who will be good ti an entire
            lifetime.')

Analysing *de* in the *propositional assertion* construction as the head of the projection selected by the matrix verb *shì* 'be' allows us to correctly predict the unacceptability of SFPs within DeP (cf. [108]). Being the clausal complement of the matrix verb *shì* 'be', DeP represents an embedded context, whence the ban on SFPs. This ban is absolute due to the presence of a non-root C, i.e. *de*.

(108) [*TopP* [*Zhèi ge dōngxī*]j [*TP* *tāi* *shì* [*CP(-root)* [*ti* *yīnggāi*
            this CL thing   3SG be   ought
       bān -*de* -*dòng* tj (*le)]   *de*]]]
       remove-able-move   CLOW C(-root)
       'This thing, he should indeed be able to move it.'

Once we acknowledge that *de* in the propositional assertion construction heads the complement embedded under the matrix verb, we can account for the co-occurrence of this *non-root* C *de* with a low *root* C (e.g. *le*) construed with the matrix clause, resulting in the order *de le*:

(109)   [ClowP[TP *Wèntí*ᵢ   *xiànzài* [*shì* [C(-root) tᵢ *néng jiějué de*]]]   *le*]
              problem now   be   can solve C(-root) CLOW
         'The problem can certainly be solved now.'

(110)   [ClowP[TopP[*Zhèi ge dōngxī*] [TP *tā* [*shì* [C(-root)   *yīnggāi*
                   this CL thing   3SG be   ought
         bàn -de -dòng de]]]   *le*]]
         remove-able-move C(-root) CLOW
             'This thing, he should indeed be able to move it.'

The co-occurrence of the low C *le* with *de* would not be possible if *de* were a low *root* C on a par with *le* and likewise construed with the matrix clause, because SFPs instantiating the same projection are in a paradigmatic relation to each other and mutually exclusive (cf. [89] in section 7.2.4 above).[33] Given that *le* instantiates the lowest C projection within the split CP, it cannot be preceded by another root C.

7.3.3.2 The exclusively non-root C *dehuà*

Dehuà heading conditional clauses is another non-root C. Recall from chapter 6.1.1 above that conditional clauses are analysed as clausal topics located in Spec,TopP:

(111)   [ClowP[TopP[C(-root) *Ākiū jīntiān líkāi Běijīng* (*le) *dehuà*]
                   Akiu today leave Beijing CLOW C(-root)

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33 Interestingly, hardly any of the numerous studies on SFPs discusses sentence-final *de* in the propositional assertion construction; this can be interpreted as reflecting an intuitive awareness of the fundamental difference between the exclusively non-root *de* and the other SFPs. In fact, Zhu Dexi (1961: 10) explicitly states that *de* in the propositional assertion is not on a par with SFPs, but in construction with the preceding *shì*, in my view paraphrasing *shì*'s selecting the projection headed by *de*. Hu Mingyang (1981: 347–348) considers *de* an innermost SFP on a par with *le*; these two SFPs are said to differ from the other SFPs insofar as they cannot be "split off" the sentence. Xiong Zhongru 2007 simply assumes *de* to instantiate another, fourth class of *root* C below Zhu Dexi's (1982) innermost SFPs such as *le* and *láizhe*.

[*TP* tā hěn kuài jiù yào dào]] le]
      3SG very fast then will arrive CLOW
   'If Akiu has left Beijing today, then he should be here very soon.'

(112)   [*TopP*[*CP(-root)*[*Rúguǒ xià yǔ* (*le)] *dehuà*] [*TP* wǒ jiù bù qù]]
                  if fall rain CLOW C(-root) 1SG then NEG go
         'If it rains, then I won't go.'

Again, no SFPs are allowed within the projection headed by *dehuà*, exactly as in the case of the projection headed by *de* in the propositional assertion construction.

The analysis of *dehuà* as a non-root C is confirmed by its behaviour in the so-called "afterthought construction" (cf. Chao Yuen Ren 1968: 132; Lu Jianming 1980).[34] The constituent representing the "afterthought" part must be adjoined to the entire sentence including the (split) CP, i.e. to the right of the Force head *ma* in (113a):

(113)   a.   [*ForceP* *Lái* -le ma], nǐ gēge (*ma)?
                     come-PERF FORCE 2SG brother FORCE
              'Has he come, your brother?'

        b.   [*ForceP*[*TP* *Nǐ gēge lái -le]* ma]?
                     2SG brother come-PER FORCE
              'Has your brother come?'
              (Lu Jianming 1980: 28)

When the clause headed by *dehuà* plays the role of such an afterthought (cf. [114b]), crucially, *dehuà* is retained, confirming that *rúguǒ tā lái dehuà* forms a constituent (CP):[35]

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34 As observed by Chao Yuen Ren (1968: 132), the afterthought part is likely to be read in a faster tempo, the preceding part constituting the main clause.

35 Incidentally, the unacceptability of the adverb *jiù* 'then' in the main clause in (114b), repeated in (i), argues against a derivation of the afterthought construction via right dislocation and confirms the adjunction-to-CP-analysis proposed here. (For further discussion, cf. Gasde and Paul 1996, Paul 2009.)

(i)   *Wǒ (*jiù) bù cānjiā huìyì le, rúguǒ tā lái dehuà*
      1SG then NEG attend meeting CLOW if 3SG come C(-root)
      'I won't attend the meeting, if he comes.'

(114) a. *[ClowP[TopP[CP(-root) Rúguǒ tā lái   dehuà]*
                    if   3SG come C(-root)
       [TP wǒ jiù   bù cānjiā huìyì]   le]
          1SG then NEG attend meeting CLOW
       'If he comes, then I won't attend the meeting.'

       b. *[ClowP[TP Wǒ bù cānjiā huìyì]   le] [CP(-root) rúguǒ tā lái   dehuà]*
               1SG NEG attend meeting CLOW   if   3SG come C(-root)
           'I won't attend the meeting, if he comes.'

The non-root C *dehuà* must therefore be distinguished from particles optionally
heading TopicP such as *ne*:[36]

(115) a. *[TopP Quèshí [Top'[Top° ne] [TP tā de nénglì shì bǐ   wǒ*
               indeed   TOP   3SG SUB ability be compared.to 1SG
       qiáng]]]
       strong
       'Indeed, his abilities *are* greater than mine.'

       b. [TP *Tā de néngl shì bǐ   wǒ qiáng]], quèshí (*ne)*
              3SG SUB abilit be compared.to 1SG strong   indeed TOP
           'His abilities *are* greater than mine, indeed.'

A particle such as *ne* instantiating the head *Topic* selects a TP-complement to its
right (or another TopP, giving rise to multiple topics), whence the observed
unacceptability of these topic particles in the afterthought part.

    This analysis is confirmed by the co-occurrence of *dehuà* with a Top°, which
would be impossible if *dehuà* were a Top° itself, because a topic XP can only be
followed by one particle realizing Top° at a time. In the case of two successive
heads Top° and only one topic XP, a conflict would arise between the two heads
as to which one projects, i.e. hosts the topic in its specifier and selects the TP-
complement to its right.

(116) a. *[TopP[C(-root)[Yàoshì xià yǔ] dehuà] [Top'[Top° ne] [TP wǒ jiù bù   qù]]]*
               if   fall rain C(-root)   TOP   1SG then NEG go
           'If it rains, I won't go.'

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36 Recall from section 7.2.2.2. above that the topic head *ne* and the Force head *ne* are two
separate items with a distinct categorial status.

b. *Wǒ bù qù , [C(-root)[yàoshì xià yǔ] dehuà] (* ne)*
   1SG NEG go   if   fall rain C(-root) TOP
   'I won't go, if it rains.'

Incidentally, examples of this type again challenge the overall contrastive value postulated for *ne* by William C. Lin (1984) and Constant (2011).

Finally, note that extraction from the clausal complement of *dehuà* is possible:

(117) a. *[TopP[CP(-root)[TP Nǐ [PP duì   Lǐsì] yǒu yìjiàn] dehuà]*
                         2SG   towards Lisi have prejudice C(-root)
       [TopP nà [TP wǒmen bìxū zhǎo   lìngwài yī ge rén]]]
           then   1PL   need search else   1 CL person
       'If you are prejudiced against Lisi, then we need to look for
        somebody else.'

       b. *[TopP[CP(-root)[TopP[PP Duì   Lǐsì] [TP nǐ tPP yǒu yìjiàn]] dehuà]*
                          towards Lisi   2SG   have prejudice C(-root)
       [TopP nà [TP wǒmen bìxū zhǎo   lìngwài yī ge rén]]]
           then   1PL   need search else   1 CL person
       'Against Lisi, if you are prejudiced, then we need to look for
        somebody else.'

Dehuà is thus on a par with the non-root C *de* in the propositional assertion construction where extraction is also allowed (cf. [106] above).[37]

To summarize, this section has introduced the so far neglected, exclusively non-root C *de* and *dehuà*. They contrast with the other C heads, which are limited to root contexts, except for low C, which are acceptable in both root and non-root contexts. Crucially, low C are only allowed in the absence of a non-root C; as soon as either *de* or *dehuà* are present, no other C is allowed. In other words, non-root contexts do not display a split CP, but have a one-layer CP only,

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37 Both *dehuà* and *de* thus contrast sharply with the subordinator *de* in the nominal projection; as illustrated in (ii), extraction from relative clauses is barred (irrespective of the presence/absence of the NP-complement of *de*, i.e. *huà* 'words'):

(i) *Wǒ méi tīngdào [DeP[TP tā duì   nǐ shuō] [De' de ([NP huà])]]*
     1SG NEG hear   3SG towards 2SG say   SUB word
     'I haven't heard the words he spoke to you/what he said to you.'

(ii) * *[TopP[PP Duì   nǐ] [TP wǒ méi tīngdào [DeP[TP tā tPP shuō] [De' de ([NP huà])]]]]*
        towards 2SG 1SG NEG hear   3SG say   SUB word

as opposed to the three-layered split CP in root contexts. This furthermore illustrates the fundamental root vs non-root asymmetry at work in the Chinese C-system.

7.4 The hierarchical relations between TopP and the subprojections headed by SFPs

So far, I have put aside the question of how the three-layered split CP established for SFPs *qua* heads interacts with the hierarchy obtained in the sentence periphery for the projections TopP and 'even' FocusP hosting the relevant XPs in their specifiers: TopP > 'even' FocP > TP (cf. chapter 6.4 above).

Let us first determine the relative hierarchy between low C and TopP. The fact that the low C (*láizhe, le, ne₁*) are incompatible with certain temporal adverbs, both when inside and outside TP, shows that the low C must scope over them in both cases. We thus obtain the hierarchy: Clow > TopP:

(118)   a.   [$_{ClowP}$[$_{TP}$ *Tā zhōngyú/*míngtiān dǎsǎo fángjiān] le]*
                3SG finally / tomorrow clean room   CLOW
          'He finally started cleaning the room.'

      b.   [$_{ClowP}$[$_{TopP}$ *Zhōngyú/*míngtiān*[$_{TP}$ *tā   dǎsǎo fángjiān]] le]*
                finally / tomorrow   3SG clean room   CLOW
          'Finally, he started cleaning the room.'

(119)   [$_{ClowP}$[$_{TopP}$ *(Xiànzài/*míngtiān)* [$_{TP}$ *tā   (xiànzài/*míngtiān) dǎsǎo*
                now   tomorrow   3SG now / tomorrow clean
        fángjiān]] ne]
        room   CLOW
        'He's cleaning the room right now.'

(120)   [$_{ClowP}$[$_{TopP}$ *(Gāngcái/*míngtiān)*[$_{TP}$ *tā (gāngcái/*míngtiān) dǎsǎo*
                just / tomorrow 3SG just / tomorrow clean
        fángjiān]] láizhe]
        room   CLOW
        'He just cleaned the room.'

Given the hierarchy 'TP < low C < ForceP < AttitudeP', Force is expected to be higher than, i.e. have scope over TopP as well: ForceP > TopP. This prediction is

confirmed by the incompatibility of Discourse-linked *wh*-phrases with the Force head *ma*; again, this holds for D-linked *wh*-phrases both inside TP (cf. [121] and [122]) and in TopP above TP (cf. [123] and [124]). D-linked *wh*-phrases are used here, because in contrast to "plain" *wh*-phrases such as *shéi* 'who', *shénme* 'what', they are also acceptable in TopP (cf. the discussion in chapter 6.1.1 above).

(121) $[_{ForceP}[_{TP}$ *Tā mǎi-le   [nǎ   jiàn yīfu]] (*ma)]* ?
           3SG buy-PERF which CL   dress   FORCE
      'Which dress did he buy?'

(122) $[_{ForceP}[_{TP}$ *[Nǎ   jiàn yīfu] bǐjiào guì]   (*ma)]*?
             which CL dress rather expensive FORCE
      'Which dress is rather expensive?

(123) $[_{ForceP}[_{TopP}[_{DP}$ *Nǎ   jiàn yīfu]$_i$ $[_{TP}$ nǐ yǐjīng   chuān-guo t$_i$]](*ma)]*?
             which CL dress   2SG already put.on-EXP   FORCE
      $[_{ForceP}[_{TopP}[_{DP}$ *Nǎ   jiàn]$_i$$[_{TP}$ nǐ hái méi chuān-guo t$_i$]]] (*ma)]*?
             which CL   2SG still NEG put.on-EXP   FORCE
      'Which dress have you already tried on? And which haven't you tried
       on yet?'

(124) $[_{ForceP}[_{TopP}$ *Nǎ   ge xuéxiào $[_{TP}$ wàiguó xuéshēng duō]] (*ma)]*?
             which CL school   foreign student much   FORCE
      'In which school are there many foreign students?'

Both moved topics (cf. [123]) and *in situ* topics (cf. [124]) are in the scope of *ma*. Given the rigid order TopP > 'even' FocP (cf. chapter 6.4 above), we obtain the following complete picture for the sentence periphery in Chinese:

(125)   AttitudeP > ForceP > ClowP > TopicP(recursive) > 'even' FocusP > TP

Note that (125) abstracts away from linear order, i.e. the sentence-*final* position of SFPs, and instead concentrates on the relative hierarchy between the different projections in the Chinese sentence periphery.

7.5 Conclusion

SFPs have been demonstrated to be complementisers and to realize the heads of three projections in the rigidly ordered split CP 'Low CP < ForceP < AttitudeP'. Importantly, this split CP only exists in root contexts, whereas in non-root contexts at most one C is allowed, if at all. More precisely, C-elements acceptable in non-root contexts are restricted to low C (*láizhe, le, ne₁*), to the exclusion of the Force and Attitude heads. In addition, this chapter has identified the so far neglected exclusively non-root C-elements *de* in the propositional assertion construction and *dehuà* heading conditional clauses. Importantly, the so-called subordinator *de* in modification structures 'XP *de* NP' (where in addition to clauses, XP includes any kind of modifier: NP, DP, QP, AdpositionP, AdjectiveP) is not a C-element, but instead instantiates different heads on the D-spine, comparable to English *of* and possessive *'s*.

The root vs non-root asymmetry observed in the Chinese C-system implies that along with other features, SFPs also have to be specified for the feature [±root]. With respect to their complex feature bundles, Chinese SFPs are therefore on a par with complementisers such as English *that* and *if*, which besides features such as Force (declarative or interrogative, respectively) also encode [-root], thus challenging Huang, Li and Li's (2009: 35) view that such complex feature bundles are a characteristic of functional categories in Indo-European languages, but not in Chinese.

As to be discussed in the next chapter, this "syncretic" character makes it impossible to dismiss Chinese SFPs as "categorially deficient" (cf. among others Toivonen 2003; Biberauer, Newton, and Sheehan 2009), where this dismissal is motivated by the intention to maintain the cross-categorial generalization associating sentence-final position of particles with OV languages only.

8 Chinese from a typological point of view: Long live disharmony!

Throughout this book I have demonstrated how a careful syntactic analysis of Chinese, unhampered by any prejudices with respect to an expected result, invalidates quite a number of typological generalizations and challenges preconceived ideas about isolating languages.

8.1 Chinese as an isolating language

We have seen that Chinese does not have an impoverished inventory of lexical categories, but displays instead the full range of lexical categories posited for inflecting languages: verb, noun, adjective, preposition, postposition. As a consequence, there is no room for "hybrid" categories with a "dual categorial" status such as *coverbs* often claimed to be a typical characteristic of isolating languages. Furthermore – and rather "surprisingly", at least with respect to our expectations concerning the structure of isolating languages – Chinese not only clearly distinguishes adjectives from stative verbs, but has in fact two classes of adjectives with distinct semantic and syntactic properties, *simple adjectives* and *derived adjectives*. The latter are the output of morphological processes, viz. complete or partial reduplication (cf. *gāogāoxìngxìng* 'happy' from *gāoxìng*; *húlihútu* 'muddle-headed' from *hútu*) and modifier-head compound formation (*bǐ-zhí* 'brush-straight' = 'perfectly straight'). Given that the distinct semantic and syntactic properties characterizing simple vs derived adjectives are predictable on the basis of their morphological form, these two adjectival classes illustrate a standard case of morphological derivation. Morphological processes are also visible in other domains, for example in the very productive nominal compound formation (where the modifier always precedes the modifiee):

(1)   a.   *[N° qìxiàng   -tái   /-tú   /-yùbào]*
                meteorology-platform/-map/-forecast
                'weather station / weather map/ weather forecast'

      b.   *[N° huǒchē-zhàn -zhǎng]*
                train   -station-head
                'station-master'

Accordingly, it is not correct to assume that isolating languages lack morphology, more precisely, derivational morphology (also cf. Packard 2000).

The typological generalizations invalidated by the analyses presented in this book concern predictions made by word order typology based on the concept of cross-categorial harmony, that is, the observation going back to Greenberg (1963) that in many languages the order between a head and its complement is the same across different categories. The fact that Chinese does not behave as expected invites a general re-examination of the role assigned so far to cross-categorial harmony.

The discussion on cross-categorial harmony (CCH) and related issues is structured as follows. Section 8.2 presents the two main approaches to CCH, *viz.* Hawkins (1980, 1982) and Dryer (1992, 2009). Section 8.3 argues in favour of taking at face value the numerous cases of cross-categorial *dis*harmony observed for Chinese, and against having considerations of harmony influence the analysis of controversial categories. Section 8.4 introduces recent typological data bases such as the *World Atlas of Language Structures online* (WALS) and discusses some major factors which reduce the utility of typological data bases in general. Interestingly, the enlarged language sample in WALS has the effect of relativizing the statistical weight of cross-categorial harmony. Section 8.5 follows Newmeyer (2005) and argues against past attempts to assign to typological generalizations such as CCH the status of a principle of grammar, e.g. in the form of the *Head Parameter*. More precisely, as demonstrated by Whitman (2008), cross-categorial generalizations are not candidates for universals of grammar; they are of a fundamentally statistical nature, because they result from well-documented patterns of language change. As a consequence, exceptions to "harmonic" situations such as those provided by Chinese are precisely what we expect; they arise when the historical origin of an item is different from the one observed in the languages having served as the basis for the generalization. Section 8.6 concludes the chapter and the book.

8.2 The concept of *cross-categorial harmony*

8.2.1 Hawkins (1980, 1982)

Hawkins was the first to explicitly use the term *cross-category harmony*, which as *cross-categorial harmony* (CCH) has become the current usage. Caution is required, though, because the way he defines the CCH is different from that of Greenberg (1963) as well as from that of many other typologists working with this concept (cf. the section on Dryer [1992, 2009] immediately below). Hawkins

applies the CCH to *operator – operand* pairs across categories, where the notion *operator* is said to correspond to *modifier* and *operand* to *modified* (a distinction borrowed from Venneman 1973). In Hawkins' (1980, 1982) system, determiners, adjectives and genitives are operators on nouns as operands; direct objects, adverbials and subjects are operators on verbs as operands; and NPs are operators on adpositions as operands. The task of the CCH is described as follows:

> CCH asserts […] the importance of a balance in the position of the operand relative to its operators across the different operand categories. It is claimed that there is a quantifiable preference, across the languages of the world, for the ratio of preposed to postposed operators within one operand category to generalize to the other operand categories. Whatever position the operand of one category occupies in relation to its operators should preferably be matched by the position of the operand in each of the other categories. And the more a language departs from this 'ideal' harmonic ordering, the fewer exemplifying languages there will be. (Hawkins 1982: 4)

The last sentence illustrates the quantitative component inherent in Hawkins' definition of the CCH, i.e. languages can conform to the CCH in different degrees; the more deviations from the CHH a set of 'operator – operand' pairs displays, the smaller the number of languages realizing this particular set of pairs. For example, SVO languages with postpositions have the deviation factor 1, and SOV languages with prepositions the deviation factor 2; accordingly, the latter type of languages are predicted to be less numerous than the former (cf. Hawkins 1980: 148, table 9). This prediction is borne out by the sample of languages in Greenberg's (1963) appendix II where 19 SVO languages have postpositions and only five SOV languages prepositions. Finally, given that the position of the operand is decisive for the CCH and that it is verbs, adpositions and nouns that act as operands, the harmonic relations established by Hawkins correspond *grosso modo* to the Greenbergian ones, even though the way the harmonies are obtained is not identical.

8.2.2 Dryer (1992, 2009)

In his re-examination of the Greenbergian word order correlations, Dryer (1992: 95) invalidates the correlation established by, among others, Greenberg (1963) and Hawkins (1980) between the word order type VSO, SVO, SOV, on the one hand, and the relative order between adjective and noun, on the other. In his data base, there is no tendency for VO languages to have an NP with the order 'noun adjective', nor is there a tendency for OV languages to have an NP with the order 'adjective noun'. However, relative clauses as well as genitives *are*

claimed to be object patterners with the noun as verb patterner (cf. Dryer 1992: 90).[1] Verb and noun thus do not show the same directionality vis-à-vis all of their "dependents", where *dependent* is a cover term for complements of verbs and adpositions and modifiers in the NP, respectively. Using Dryer's terms, while <noun, genitive> and <noun, relative> as well as <adposition, NP> are "correlation pairs" with noun and adposition acting as "verb patterners", <noun, adjective> presents a "non-correlation" pair, because it does not mirror the order between a verb and its object (cf. Dryer 1992: 82).[2] Note that it is Greenberg's (1963) conception of cross-categorial harmony as made explicit by Dryer (1992) that has imposed itself, *viz.* the replication of the relative surface order between verb and object by other, non-verbal categories.

8.3 The cases of cross-categorial disharmony in Chinese: What you see is what you get

This section checks one by one the predictions made by Dryer's (1992, 2009) correlations pairs for Chinese.

8.3.1 Dryer's (1992, 2009) correlation pairs

In a first step, Dryer's correlation pairs that are relevant for Chinese are provided and compared with the actual word order found in Chinese. (Given that the correlation pairs, i.e. cross-categorial harmony in general, are established for surface orders, I likewise confine myself to the surface.)

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1 Dryer's reasoning here is not clear to me. I refer the reader to his rather lengthy explanatory footnote 12, concluded by the following reference to English:"The absence of a correlation in the case of noun and adjective despite the correlation in the case of noun and relative clause can be partly understood in terms of the large number of languages, like English, in which the adjective precedes the noun and the relative clause follows it." (Dryer 1992: 96, footnote 12).

2 "If the order of a pair of elements X and Y exhibits a correlation with the order of verb and object respectively, then I will refer to the ordered pair (X,Y) as a *correlation pair*, and I will call X a *verb patterner* and Y an *object patterner* with respect to this correlation pair. For example, since OV languages tend to be postpositional and VO languages prepositional, we can say that the ordered pair (adposition, NP) is a correlation pair, and that, with respect to this pair, adpositions are verb patterners and the NPs that they combine with are object patterners." (Dryer 1992: 82).

(2) Selection of correlation pairs from Dryer (1992: 108, table 39; 2009:186, table 1)[3]
    (order changed and subdivision added for ease of exposition)

Verb patterner	*Object patterner*
Group 1:	
a. verb	object
b. copula verb	predicate
c. negative auxiliary	VP
Group 2:	
d. adposition	NP
e. adjective	standard of comparison
f. verb	PP
g. verb	manner adverb
Group 3:	
h. noun	relative clause
i. noun	genitive
j. complementizer	S
k. question particle	S
l. adverbial subordinator	S

Chinese is "well-behaved" with respect to the first group. This "harmony" is not surprising, though, because in fact it does *not* go beyond the format of the VP. The ordered pair 'verb object' in (2a) is not a correlation pair, but instead serves as the standard of comparison for the other categories. The pair (2b) 'copula – predicate' (cf. [4]) can in turn be subsumed under (2a), the copula just being a particular type of verb. The pair (2c) 'negative auxiliary – VP' (cf. [3], [4]) still refers to the order within the verbal projection and therefore does not illustrate cross-categorial harmony in the strict sense, either.

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3 The correlation pairs have remained stable over nearly thirty years, modulo the absence in Dryer (2009) of the pair 'verb subject', exemplified by *(There) entered a tall man* in Dryer (1992: 108). Since in the corresponding construction in Chinese the unique (internal) argument of the verb is also to its right (cf. [i]) and on a par with 'verb object' order, the (non-)inclusion of this correlation pair does not change the picture we obtain for Chinese.

(i)   *Lái -le   kèrén*
        come-PERF guest
        'Guests have arrived.'

(3) *Tā (méi) dǎsǎo fángzi*
     3SG NEG sweep room
     'He has (not) cleaned the room.'

(4) *Tā (bù) shì fǎguórén*
     3SG NEG be French
     'She is (not) French.'

8.3.2 Where Chinese is harmonic and disharmonic at the same time

Chinese is partly well-behaved with respect to the correlation pairs in Group 2
([2d] – [2g]). The restriction "partly" is necessary, because in all cases, the oppo-
site order is likewise observed. While prepositions pattern with verbs in taking
their complement to the right (cf. [5a]), postpositions do not (cf. [5b]). Further-
more, in the so-called *transitive comparative* (cf. Erlewine 2007) the standard of
comparison (here *Lǐsì*) indeed follows the adjective (cf. [6a]) and thus qualifies
as *object patterner*, but in the comparative construction with *bǐ* 'compared to',
the standard of comparison precedes the adjective (cf. [6b]). Finally, when ar-
guments, PPs follow the verb, on a par with object NPs (cf. [7a]), but are con-
fined to preverbal position when having adjunct status (cf. [7b]).

(5) a. *Tā [PP wàng nán] zǒu -le]*
         3SG   toward south go -PERF
         'She went towards the south.'

     b. *Wǒ [PostP chúxī   yǐqián] yào huí jiā*
         1SG   New.Year's eve before need return home
         'I need to go home before New Year's eve.'

(6) a. *Tā gāo Lǐsì shí gōngfēn*
         3SG tall Lisi 10 cm
         'He is ten centimeters taller than Lisi.'

     b. *Tā bǐ   Lǐsì gāo (*bǐ   Lǐsì) shí gōngfēn*
         3SG compared.to Lisi tall compared.to Lisi 10 cm
         'He is ten centimeters taller than Lisi.'

(7) a. *Tā jì -le yī -ge bāoguǒ [PP gěi Měilì]*
         3SG send-PERF 1 -CL parcel   to Mary

'He sent a parcel to Mary.'

b. *Tā [PP gěi péngyou] chàng ge gē (*[PP gěi péngyou])*
   3SG   to friend   sing   CL song   to   friend
   'He sings a song for his friends.'

8.3.3 Necessary digression on manner adverbs in Chinese

The correlation pair 'verb – manner adverb' stated in (2g) is not easy to evaluate for Chinese, either. First, as already observed above for the other phenomena in group 2, which involve opposite orderings, manner adverbs can occur in both preverbal and postverbal position:

(8)   *Tā mànyōuyōude zǒu yī quān*
        3SG leisurely   walk 1 round
        'She walks around at a leisurely pace.'

(9)   *Tā hěn dàfāngde zuò -le   zìwǒjièshào*
        3SG very natural   make-PERF self.introduction
        'She introduced herself very naturally.'

(10)   *Tā zǒngshì chī de tài kuài*
        3SG always eat DE too fast
        'He always eats too fast.'

Second, as observed by Ernst (1994: 48), adverbs in preverbal position can be ambiguous between a subject-oriented reading (i) and a strict manner reading (ii):

(11)   *Tāmen hěn bùlǐmàode duì   lǎoshī shuō huà*
        3SG   very impolite   towards teacher speak word
        (i) 'Impolitely/rudely, they spoke to the teacher
        (ii) 'They spoke to the teacher impolitely/rudely.'

Under the first reading (11i), it was rude of the students to speak to the teacher at all, irrespective of the manner used, whereas under the second reading (11ii), the manner itself used when addressing the teacher was rude. By contrast, an adverb in postverbal position is not ambiguous and only allows for the strict manner reading, as again pointed out by Ernst (1994: 48):

(12) *Tāmen duì   lǎoshī shuō de hěn bùlǐmào*
      3SG   towards teacher speak DE very impolite
      'They spoke to the teacher impolitely/rudely.'

It is evident that the choice made here will directly influence the picture obtained for Chinese. When only counting the postverbal non-ambiguous manner instances, manner adverbs pattern with objects and nicely fit in with the "expected" harmonic picture; if, however, both pre- and postverbal manner adverbs are included, the picture obtained will be much less neat.

The third problem related to manner adverbs in Chinese which makes it difficult to obtain a clear result for their role in a word order typology is the lack of a precise analysis for '*de* XP' in postverbal position, including the exact status of *de*.[4] While the best *translational* equivalent is indeed a manner adverb, there exist quite a few properties challenging the standard analysis of '*de* XP' as manner adverb (cf. Ernst 2002 and references therein for an adverb analysis in terms of right adjunction).

First, only predicative adjectives (e.g. *duì* 'right', *zìrán* 'natural') are acceptable following *de*, to the exclusion of non-predicative adjectives (e.g. *cuò* 'wrong', *tiānrán* 'natural') and verbs ((cf. [13] and [14]). The opposition between predicative and non-predicative adjectives is illustrated in (15) (also cf. the discussion in chapter 5.1.1 above.).

(13) *Tā cāi   de duì /*cuò*
      3SG guess DE right/wrong
      'She guessed right/wrong.'

(14) *Tā huídá de hěn zìrán / *tiānrán*
      3SG answer DE very natural/ natural
      'He answered very naturally.'

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4 The lack of a precise analysis of *de* is in general covered up by hyphenating it with the preceding verb, as is the convention for aspect suffixes, and thus presenting it as part of the verb, as in e.g. *Tā cāi-de duì* (cf. [13]). My glossing it as DE and assigning it the status of a functional head (cf. below) is only a first preliminary step and illustrates the necessity for further research. Note that in the following I limit myself to the so-called *descriptive complement*, to the exclusion of the *result/extent complement*, which has the same surface form '*de* XP' and is analysed as a head-intial CP by Huang (1982: 96, footnote 15). For further discussion of the different postverbal '*de* XP' types, cf. among others Y.-H. Audrey Li (1990, ch. 3), Sybesma (1991a; 1999a, ch. 2), C.-C. Jane Tang (2001).

(15) *Tā de kànfǎ   { bù duì / hěn zìrán }/{*cuò /*tiānrán}*
      3SG SUB opinion   NEG right/very natural/ wrong/ natural
      'His point of view is not correct/ is natural / is wrong.'

Under an analysis of '*de* XP' as manner adverb, the restriction to exclusively predicative adjectives for XP is completely unexpected. This constraint can, however, be captured by analysing the adjectival phrase (AP) as a complement selected by *de* as a head, where the resulting *de*-phrase is in turn selected by the verb.

   Second, this new analysis can also account for the obligatory adjacency between the *de*-phrase '*de* XP' and the preceding verb as well as for that between *de* and the following AP; hence both positions for *wèntí* 'question' are bad in (16). This property remains mysterious under an analysis as adverb.

(16) a. *Tā huídá (*wèntí)   de (*wèntí) hěn zìrán*
          3SG answer   question DE   question very natural
          'He answered the question very naturally.'

      b. *Tā huídá (*-le) de hěn zìrán*
          3SG answer -PERF DE   very natural
          'He answered very naturally.'

   Third, unlike adverbs (cf. [19]), the AP following *de* can be negated ([17a]), questioned in the 'A-*bù*-A' form ([18]) (cf. C.-T. James Huang 1988b, Y.-H. Audrey Li 1990:45, among others) and modified by adverbs ([17b]), thus providing further evidence in favour of its predicate status and against its adverbial status:

(17) a. *Tā shuō [de [_AP_ bù qīngchǔ]]*
          3SG speak   DE   NEG clear
          'He doesn't speak clearly.'

      b. *Tā shuō   [de [_AP_[_PP_ bǐ   nǐ] [_AP_ gèng qīngchǔ]]]*
          3SG speak   DE   compared.to 2SG   more clear
          'He speaks even more clearly than you.'

(18) *Tā chàng de [dàshēng bù dàshēng]?*
      3SG sing   DE loud   NEG loud
      'Does she sing loudly?'

(19)   * *Tā [mànyōuyōude] bù [mànyōuyōude] zǒu yī quān?*   (cf. [8] above)
        3SG leisurely   NEG leisurely   walk 1   round

I would therefore like to propose that the AP is a predicative projection which denotes a subevent that enters into the composition of a complex predicate with the matrix verb: 'V *de* AP'. This not only accounts for the syntactic properties just described, but also for the strict manner interpretation observed for postverbal '*de* AP' (cf. [12] above), which contrasts with the availability of both a strict manner interpretation (ii) and a subject-oriented reading (i) for preverbal adverbs (cf. [11] above).[5]

This short digression on manner adverbs in Chinese reveals two major sources of problems, apparently neglected by word order typology as it is currently practiced. One is the possibly insufficient state of knowledge of the language at hand, which makes it impossible to establish a correlation pair, the phenomena involved simply not having been studied enough (as e.g. '*de* XP' in Chinese). The other problem is directly linked to the general format imposed by correlation pairs aiming at testing cross-categorial harmony (X either precedes or follows X). This format leaves no room for semantic ambiguities displayed by particular items in a given position, as observed for Chinese manner adverbs in the preverbal vs the postverbal position (assuming for the sake of the argument adverbial status for '*de* XP' here). To my knowledge, these not infrequent cases where no 1:1 relationship between form and meaning exists have not been discussed explicitly in word order typology; nor has any heuristic device been proposed of how to deal with them, i.e. whether and how to count them. The same critique applies to the much more straightforward cases where no subtle semantic differences are involved, but where simply two opposite orders are possible within the same language; once again, one is at a loss which phenomenon to count. Needless to say, the temptation to exclusively count the harmonic one and to discard the disharmonic one is great.

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5 In fact, C.-T. James Huang (1992) already proposed a complex predicate analysis for 'V *de* AP' (although for reasons different from those presented here); apparently, this was not taken up by subsequent studies of adverbs. Also cf. Y.-H. Audrey Li (1990, ch. 3) and C.-C. Jane Tang (1990, ch. 4) for some of the observations integrated into the analysis presented here.

8.3.4 Where Chinese is disharmonic throughout

Let us now turn to the correlation pairs in group 3. Here Chinese shows exactly the opposite order of the one predicted for a SVO language and displays instead the cross-categorial *dis*harmony which is so often cited in the literature.

8.3.4.1 The nominal projection

In contrast to the orders 'noun – relative clause' and 'noun – genitive' expected for a SVO language (cf. the correlation pairs [2h] and [2i] above), in the Chinese nominal projection all modifying elements as well as relative clauses and complement clauses *precede* the NP.

(20)   *yī jiàn zāng/ gānjìng yīfu*
       1 CL   dirty/ clean   dress
       'a dirty/pretty/clean dress'

(21)   *yī ge [NP[NP hēi   qī   ] yīguì]*   (Fan Jiyan 1958: 215)
       1 CL   black lacquer wardrobe
       'a black-lacquered wardrobe'

(22)   *[DP Měilì/ tāmen] de péngyou*
          Mary/ 3PL   SUB friend
       'Mary's friend/their friend'

(23)   *[PP duì   wèntí] de kànfǎ*   (Lü 2000 [1980]: 157)
          towards problem SUB opinion
       'an opinion about the problem'

(24)   *[DP zhèxiē [TP Øi mǎi xiǎo   qìchē] de réni]*
          these   buy small car   SUB person
       'the persons who bought a small car'

(25)   *[DP[TP Bālí   xià xuě   ] de xiāoxi].*
          Paris fall snow   SUB news
         'the news that it is snowing in Paris'

As discussed in chapter 5.1.3 above, under certain circumstances the subordinator *de* can be absent and the adjectival or nominal modifier can be simply juxtaposed with the head noun (cf. [20] and [21]).

8.3.4.2 The head-final CP

Of the remaining three "exceptions" to the word order predicted for a SVO language, two cases, i.e. (2j) and (2k), reduce to the unexpected, hence disharmonic head-final character of the CP in Chinese; the order 'clausal complement – complementiser' is "unexpected" insofar as here the complementiser visibly does not pattern with the verb.

As argued for in chapter 7, in the light of Rizzi's (1997) split CP it makes sense to extend the notion of complementisers from exclusively subordinating items such as *that* and *whether* in English to the so-called *sentence-final particles* (SFP) in matrix sentences in Chinese, among them the yes/no-question particle *ma*.

(26)   [$_{ForceP}$[$_{TP}$ *Tā huì chàng gē] ma]?*
              3SG can sing   song FORCE
         'Can he sing?'

As a consequence, Dryer's (1992) "question particle" involves a C element as well and the relevant correlation pair (2k) can therefore be subsumed under (2j) predicting the order 'complementiser – sentential complement' for SVO languages. Recall that chapter 7 also provided evidence for *de* in the propositional assertion and *dehuà* in conditional clauses as exclusively non-root complementisers, thus consolidating the head-final character of the Chinese CP in both matrix and embedded contexts.

The disharmony between SVO order and head-final CP displayed by Chinese is all the more significant as Dryer (1992: 102), referring to his own work (Dryer 1980) as well as Hawkins (1990: 225), concludes that "[...] in fact it may be an exceptionless universal that final complementizers are found only in OV languages. [...] complementizers are therefore verb patterners, while the Ss they combine with are object patterners."[6] This is confirmed in Dryer (2009, table [24]) where no case of sentence-final C for the 140 VO languages examined is attested.[7] Unfortunately, Dryer (2009) only indicates language genera; accordingly, there is no way to know whether Mandarin Chinese or any other

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6 This goes back to Greenberg's (1963: 81) universal 9: "With well more than chance frequency, when question particles or affixes are specified in position by reference to the sentence as a whole, if initial, such elements are found in prepositional languages, and, if final, in postpositional." Recall that in general VSO languages and SVO languages are associated with prepositions, and SOV languages with postpositions.

7 Explicit reference is made to English *that* as illustrating a clause-initial C and to Japanese *to* as illustrating a clause-final C, respectively.

Sinitic language was included under the very vast genus 'South-East-Asian and Oceanic languages' in this survey. (Note that Chinese is not included in the database used in Dryer 1992).

8.3.4.3 Dryer's (1992, 2009) unwieldy *adverbial subordinator*

Finally, the last correlation pair (2l) 'adverbial subordinator – sentence' (as in Dryer's example *because Bob left*) cannot be directly transposed to Chinese, because the term *adverbial subordinator* is very vague and turns out to involve several different categories. This holds not only for Chinese, but for other languages as well. In English, for example, items with lexical content such as *before*, *after* are in general analysed as prepositions (selecting an NP or a clausal complement), in contrast to *that* and *if* analysed as complementisers.[8] However, both groups of items would probably be considered as falling under the pre-theoretical labels *adverbial subordinators* or *subordinating conjunctions*.

The question as to what items can count as possible equivalents of "adverbial subordinators" in Chinese leads us to another poorly understood domain in Chinese syntax. While the following section can evidently not accomplish an indepth analysis, the discussion should suffice to show that whatever categories turn out to be included under the cover term "adverbial subordinator", they are all clearly different from the various types of complementisers realized by sentence-final particles (SFP) in Chinese (cf. chapter 7).

In fact, just as in English, the Chinese candidates for subordinating conjunctions such as *yàoshi* 'if', *rúguǒ* 'if', *suīrán* 'although', *jìrán* 'since', *yīnwèi* 'because', *zìcóng* 'since (temporal)' do not represent a homogeneous group, but include (sentence-level) adverbs on the one hand and prepositions on the other. As Lu Peng (2003, 2008) has argued in great detail, *rúguǒ/yàoshi* 'if', *suīrán* 'although', and *jìrán* 'since' are sentence-level adverbs on a par with e.g. *xiǎnrán* 'obviously, naturally' and *xìnghǎo* 'fortunately'; like adjunct NPs and PPs they can occupy either the TP-external or the TP-internal topic position (Spec, TopP) (cf. chapter 6). For reasons of space, this will be shown only for the pair *xìnghǎo* 'fortunately' and *rúguǒ* 'if'. (For further discussion, cf. Lu Peng 2003, 2008: §3.2.)[9]

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8 Prepositions in English behave differently from C such as *that*, *if* in that they may allow sluicing. (Thanks to John Whitman for pointing this out to me.)
(i)   *I left before Bill left, but Jane left after [e]*
(ii)   * *I know that Bill left, but Jane doesn't know that/whether [e]*
9 C.-T. James Huang (1982: 85) left open the P vs C status of items such as *yīnwèi* 'because', concentrating on the head-initial character of their projection. Note that he analysed *rúguǒ* 'if'

(27)　a.　*[*ext.TopP* <u>Xìnghǎo</u>　[*TP* wǒ [*int.TopP* [nà　fù huà]　[*AspP* mài-le*
　　　　　　　fortunately　1SG　　　　that　CL painting　　　sell-PERF
　　　　ge gāo　jià]]]]
　　　　CL high　price
　　　　'Fortunately, I sold that painting at a high price.' (Lu Peng 2008: 164)

　　　b.　*[*ext.TopP* [Nà　fù huà　] [*TP*　wǒ [*int.TopP* <u>xìnghǎo</u>　[*AspP*　mài-le*
　　　　　　　that　CL painting　　1SG　　　fortunately　　sell-PERF
　　　　ge gāo　jià]]]]
　　　　CL high　price
　　　　'That painting, I fortunately sold at a high price.'

　　　c.　*[*ext.TopP* [Nà　fù　huà]　[*ext.TopP* <u>xìnghǎo</u>　[*TP* wǒ　[*AspP* mài-le*
　　　　　　　that　CL painting　　fortunately　1SG　　　sell-PERF
　　　　ge　gāo　jià]]]]
　　　　CL high　price
　　　　'That painting, fortunately, I sold it at a high price.'

As illustrated in (27a) and (27b), *xìnghǎo* 'fortunately' as a sentential adverb can occur either in the external or the internal topic position to the left or the right of the subject, respectively. Furthermore, both the DP *nà-fù huà* 'that painting' and the adverb *xìnghǎo* 'fortunately' can co-occur in the external topic positions (cf. [27c]), in either order: *nà fù huà, xìnghǎo,...*or *xìnghǎo, nà fù huà, ...*

The same holds for both items in the TP-internal topic positions, where they are likewise interchangeable:

(28)　a.　*[*TP* Wǒ [*int.TopP* <u>xìnghǎo</u>　[*int.TopP* [nà　fù huà　]　[*AspP* mài-le*
　　　　　　1SG　　　fortunately　　　that　CL painting　　sell-PERF
　　　　ge　gāo　jià]]]]
　　　　CL high　price

　　　b.　*[*TP* Wǒ [*int.TopP* [nà　fù huà　] [*int.TopP* <u>xìnghǎo</u>　[*AspP* mài-le*
　　　　　　1SG　　　that　CL painting　　fortunately　　sell-PERF
　　　　ge　gāo　jià]]]]
　　　　CL high　price
　　　　'I fortunately sold that painting at a high price.'

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and *suīrán* 'although' as P/C-heads on a par with *yīnwèi* 'because', an analysis which remained unchallenged up to Lu Peng's (2003) dissertation.

(29) below shows *rúguǒ* 'if' to have the same distribution as *xìnghǎo* 'fortunately'. It can precede or follow the subject in the conditional clause; when to the right of the subject, it is interchangeable with an internal topic DP, both occupying the internal TopP. (Recall from chapter 6.1.1 that the external topic position is the default position for a conditional clause.)

(29) a. [ext.TopP[cond.clause <u>Rúguǒ</u> [TP nǐ [int.TopP [DP yīngyǔ kǎoshì] [AuxP néng
              if   2SG   English exam   can

kǎo ge dìyī]]]] [TP wǒ jiù jiǎnglì nǐ yī liàng xīn zìxíngchē]]
pass CL first   1SG then award 2SG 1 CL   new bicycle
'If in the English exam you can pass as first, I'll reward you with
a new bicycle.'

  b. [ext.TopP[cond.clause Nǐ [int.TopP <u>rúguǒ</u> [int.TopP [DP yīngyǔ kǎoshì] néng
              2SG   if   English exam   can

kǎo ge dìyī]]]...
pass CL first
'If in the English exam you can pass as first,...'

  c. [ext.TopP [cond.clause Nǐ [int.TopP [DP yīngyǔ kǎoshì] [int.TopP <u>rúguǒ</u> néng
              2SG   English exam   if   can

kǎo ge dìyī]]]...
pass CL first
'If in the English exam you can pass as first,...'

Accordingly, *rúguǒ* 'if' is not a head and the following clause is not its complement. Instead, *rúguǒ* is a sentence-level adverb which shows the same distribution as adjunct NPs and PPs, *viz.* it occupies the specifier of the TP-external or TP-internal TopP. [10] (Note, though, that adjunct NPs and PPs can also occur to the right of auxiliaries, a position excluded for sentence-level adverbs.)

By contrast, *yinwèi* 'because', *zìcóng* 'since (temporal)' etc. are prepositions, i.e. heads and must therefore always precede their complement clause. Note

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10 While semantically the sentence-level adverb *rúguǒ* 'if' may fulfill a function similar to that of the non-root C *dehuà*, it clearly belongs to a different syntactic category, as witnessed by the co-occurrence of the two:

(i)   [ClowP[TopP[CP(-root) Rúguǒ tā lái   dehuà] [TP wǒ jiù bù cānjiā huìyì]   le]
                  if   3SG come C(-root) 1SG then NEG attend meeting CLOW
       'If he comes, then I won't attend the meeting.'

that for causal and temporal clauses the external topic position is likewise the default position:

(30) a. *[ext.TopP[PP__Yīnwèi__ [TP__Zhāngsān zuótiān   méi shōudào nà fēng xìn]]*
                        because Zhangsan yesterday NEG receive that CL letter
         [TP wǒ jīntiān gěi tā   fā -le   fèn chuánzhēn]]
            1SG today for 3SG send-PERF CL fax
         'Since Zhangsan didn't receive the letter yesterday, I sent him a fax
          today.'

      b. **[ext.TopP[PP Zhāngsān[Prep __yīnwèi__] zuótiān méi shōudào nà fēng xìn]]*
                        Zhangsan   because yesterd. NEG receive   that CL letter
         [TP wǒ   jīntiān gěi tā   fā -le   fèn chuánzhēn]]
            1SG today for 3SG send-PERF CL   fax
         (Lu Peng 2008: 131)

The fact that constituents to the left of the prepositions *yīnwèi* 'because', *zìcóng* 'since (temporal)' etc. are clearly outside the causal/temporal clause PP is further illustrated in (31):

(31) * *[ext.TopP __Zuótiān__ [ext.TopP[PP__yīnwèi__ [TP__Zhāngsān   méi shōudào nà fēng xìn]]*
                yesterday   because Zhangsan NEG receive   that CL letter
         [TP wǒ __jīntiān__ gěi tā   fā -le   fèn chuánzhēn]]
            1SG today for 3SG send-PERF CL   fax   (Lu Peng 2008: 182)

Zuótiān 'yesterday' can only be construed as matrix topic and is then in contradiction with *jīntiān* 'today' in the matrix TP. (31) therefore represents the same incompatibility between the two adjunct NPs *zuótiān* 'yesterday' and *jīntiān* 'today' as (32) without the *yīnwèi*-PP as second external topic:

(32) * *[ext.TopP__Zuótiān__ [TP wǒ __jīntiān__ gěi tā   fā -le   fèn chuánzhēn]]*
                yesterday 1SG today for 3SG send-PERF CL fax

    (31) thus contrasts sharply with (33a) where *míngtiān* 'tomorrow' to the left of *rúguǒ* is not a matrix topic, but included in the conditional clause, as shown by its compatibility with *hòutiān* 'the day after tomorrow' in the matrix TP:

(33) a. *[ext.TopP[cond.clause __Míngtiān__ rúguǒ [TP Zhāngsān   hái méi shōudào*
                        tomorrow if   Zhangsan   yet NEG receive

nà fēng xìn] [*TP* wǒ <u>hòutiān</u>   gěi tā fā   fèn chuánzhēn]]
that CL letter   1SG day.after.tom. for 3SG send CL fax
'If tomorrow Zhangsan still hasn't received the letter, I'll send him
a fax the day after tomorrow.'

b.   [*ext.TopP*[*cond.clause* **Rúguǒ** [*TP* **Zhāngsān**   <u>míngtiān</u>   hái méi shōudào
                        if   ZhangSan tomorrow yet NEG receive
nà   fēng xìn] [*TP* wǒ <u>hòutiān</u>   gěi tā fā   fèn chuánzhēn]]
that CL letter   1SG day.after.tom. for 3SG send CL fax
'If tomorrow Zhangsan still hasn't received the letter, I'll send him
a fax the day after tomorrow.'   (Lu Peng 2008: 183)

The acceptability of (33a) is thus on par with that of (33b) where *míngtiān* occurs
to the right of *rúguǒ* and the subject DP and is therefore automatically construed
as part of the conditional clause.

    This brief examination has demonstrated that Chinese equivalents for sub-
ordinating conjunctions are not a homogeneous group, but instantiate different
categories, i.e. sentence-level adverbs (e.g. *rúguǒ* 'if', *suīrán* 'although', *jìrán*
'since') on the one hand, and prepositions taking clausal complements (e.g.
yīnwèi 'because', *zìcóng* 'since (temporal)'), on the other. As a consequence, the
correlation pair 'adverbial subordinator – sentence' has no *raison d'être* for
Chinese, because it does not provide any additional information, the order
'preposition – NP' already being stated in the correlation pair (2d). As for the
sentence-level adverbs, since they are phrases and not (selecting) heads, they
are not relevant for cross-categorial correlations based on the relative order
between a verbal head and its object. Finally, prepositions and sentential ad-
verbs are clearly distinct from SFP realizing different types of complementisers.

8.3.5 Interim summary

The preceding discussion illustrates a major problem of word order typology: it
uses both vague semantic labels such as *adverbial subordinator* and precise
syntactic categories (adposition, complementiser etc.) in order to establish rela-
tive orderings. As a consequence, the correlation pairs are not equipollent and
sometimes overlap, as in the case of (2j) and (2k) above, where the correlation
pair for the question particle and for the complementiser in fact refer to the
same category, i.e. complementiser, as evidenced by the sentence-final particle
ma. In the worst case (exemplified by *adverbial subordinator*), the term chosen
does not even refer to an identifiable category, but covers several different phe-

nomena. It goes without saying that the problems outlined here increase exponentially in large-sized data bases such as *World Atlas of Language Structures online* (cf. section 8.4 immediately below), which is a huge collective project. Since here the data are not entered by a single person, it is impossible to identify and control for individual bias introduced by a compiler.

8.4 Typological data bases and the concept of cross-categorial harmony

The *World Atlas of Language Structures online* (cf. Dryer and Haspelmath 2008), short WALS (wals.info), has become one of the major testing grounds for potential universals, referred to by functional and formal linguists alike. Its sheer size seems to guarantee its solidity: for example, the feature concerning the relative order betwen verb and object provides data for as many as 1519 languages.

One interesting consequence of the huge number of languages covered by WALS is the relativization and/or refutation of several so far robust cross-categorial correlations, such as the one between the V(S)O order and prepositions and OV order and postpositions (cf. Greenberg's universals 3 and 4 as well Dryer's correlation pair (2d) above). When combining the feature 83a for the relative order between verb and object with the feature 85a for the relative order between adposition and NP, one obtains the following results (wals.info, accessed February 2, 2013):

(34)   Correlation between 'verb – object' order and 'adposition – NP' order

	Postpositions (577)	Prepositions (512)	Inpositions (8)	No dom. order (58)	No adposition (30)
OV (713)	472	14	3	16	11
VO (705)	42	456	1	33	14
No dom. order (101)	34	13	3	6	5

First, there are 56 direct counter-examples against the correlation 'V(S)O – prepositions' and 'OV – postpostions', *viz*. 14 OV languages with prepositions and 42 VO languages with postpositions. Second, 49 languages have both

prepositions *and* postpositions, among them Chinese.[11] Moreover, there are 101 languages without a dominant order for verb and object, which accordingly do not allow us to establish any correlation. All in all then, about 200 languages (from a total of 1519 languages) do not conform to the expectation that adpositions pattern with verbs. This is a clear indication of the statistical nature of this particular cross-categorial harmony (addressed in more detail in section 8.5 below) and thus somewhat reduces the "exceptional" character of those languages that have two types of adpositions with opposite headedness. The fact that neither German nor Dutch figure among the latter type of languages and are instead presented as preposition-only languages without any dominant order in WALS suggests that the number of languages with both pre- and postpositions might be much larger.[12] (For postpositions in German, cf. chapter 4.4.1 and 4.4.2 above).

If one now returns to the correlation pairs of group 3, where Chinese with its head-final CP displays exactly the opposite of the expected order, one is faced with the problem that the category "complementiser" does not figure among the features that can be consulted in WALS. Instead, one has to fall back on feature 92a "polar question particle" and feature 94a "adverbial subordinator". Given the problems outlined above for that latter (non-)category when applied to English and Chinese, it seems safe to assume that the data entered for that feature will include not only complementisers, but also other categories such as adpositions selecting clausal complements, adverbs etc. Accordingly, this feature can simply not tell us much about the distribution of complementisers and is of no use here. There remains only feature 92a "polar question particle". Interestingly, when correlating it with word order, OV and VO languages behave in fact more or less alike, insofar as for both word orders the sentence-*initial* position (observed for 37 OV and 82 VO languages, respectively) is much rarer than the

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11 Here WALS implements the results of Djamouri, Paul and Whitman (2009, 2013b) (Dryer, p.c.) and thereby corrects its initial presentation of Chinese as a preposition-only language. For postpositions, cf. chapter 4 above.

12 The classification of Dutch and German as displaying no dominant basic word order illustrates another drawback of purely surface-oriented data bases. For there is no way to encode the well-known fact that in Dutch and German matrix clauses, the (inflected) verb always occupies the second position, whereas in embedded clauses, the inflected verb occupies the sentence-final position. In other words, there is *no* choice at all, contrary to what the label "no dominant order" implies. It is correct that WALS does have a feature (81b) referring to languages with two dominant word orders, where German and Dutch figure among the languages with SOV or SVO. However, SVO is only one of the possible realizations of V2 order: not only the subject, but any XP (argument or adjunct) can occupy the first position preceding the verb, leading to 'XP V S…' order.

sentence-*final* position (observed for 140 OV and 154 VO languages, respectively). Since against the backdrop of Rizzi's (1997) split CP approach it is likely that many of the question particles can be analysed as complementisers, this considerably weakens Dryer's (1992: 102; 2009, table [24]) claim that complementisers are verb patterners and that accordingly final complementisers are found only in OV languages. As a consequence, Chinese is very probably just one example among many where a VO language has a head-final CP.

Note, moreover, that closer scrutiny of the languages included under feature 92a betrays some serious problems and raises doubts as to the utility of the data given by WALS in general. More precisely, an extremely well-studied and easily accessible language such as French is classified with languages marking polar questions by using sentence-initial "particles" such as the Austronesian language Mokilese or !Xóõ (Southern Khoisan, Bhotswana), thus presenting the mirror image of Chinese. The "particle" alluded to is *est-ce que* 'is it that' (cf. Dryer 2008a). This particle analysis is maintained despite Dryer's acknowledging the composite status of *est-ce que* ('verb plus demonstrative plus complementiser'). Given the existence of the corresponding negated form '*n'est-ce pas que* + sentence', indicating that the copula in *est-ce que* is clearly identifiable as such, the analysis of *est-ce que* as a particle, i.e. as an X° whose sub-components are opaque to syntactic operations, is at the least controversial. The presentation in WALS also completely ignores the well-known fact that *est-ce que* occurs in *wh*-questions as well and is then *preceded* by the *wh*-phrase. In other words, the alleged particle *est-ce que* is neither always sentence-initial nor does it exclusively serve to form yes/no questions. Accordingly, its description as a sentence-*initial polar* question *particle* appears patently inadequate. (For an in-depth discussion of *est-ce que*, cf. Munaro and Pollock 2005.) The fact that such a misleading analysis is proposed for a well-known language such as French is quite disturbing. It casts doubt on the accuracy of analyses in the case of languages where only second hand knowledge via consulting grammars is available, evidently the case for the majority of languages. WALS thus depends on the adequacy and exhaustiveness of the grammars used and must fail where the respective grammars fail.

This is a general problem inherent in all typological data bases. For example, *TerraLing* (cf. http://www.terraling.com)[13], a "searchable database of the world's languages" does not mention postpositions for German, either (cf.

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13 As stated on the website: "TerraLing is a collection of searchable linguistic databases that allows users to discover which properties (morphological, syntactic, and semantic) characterize a language, as well as how these properties relate across languages."

http://www.terraling.com/groups/7/lings/730), but only prepositions, exactly like WALS. TerraLing also adopts some of the more obscure correlation pairs, such as *adverbial subordinator* – clause (along with complementiser – clause). As in the case of WALS, a detailed examination of the entry for Mandarin Chinese (cf. http://www.terraling.com/groups/7/lings/772) reveals quite a few shortcomings. First, only prepositions, but no postpostions are postulated for Chinese, contrary to fact (cf. chapter 4 above). Furthermore, despite the well-established analysis of the sentence-final particle *ma* in yes/no questions as a complementiser (cf. Thomas Hun-tak Lee 1986), complementisers seem to be absent from Chinese as well, given the negative value for both correlation pairs ("values" in TerraLing's terminology) 'complementiser – clause' and 'clause – complementiser'. Instead, Chinese is said to display the order 'adverbial subordinator – clause' (but not the opposite order). As discussed at length above, this term borrowed from WALS comprises several different categories and is therefore not very informative. Interestingly, TerraLing also makes reference to suprasegmental features, such as the possible realization of polar questions by intonation (cf. value Q04). Strangely enough, this possibility is excluded for Chinese, notwithstanding the well-known observation by Lu Jianming (1985) that a yes/no question can be obtained by a rising intonation (cf. chapter 7.2.2.1 above). Last, but not least, the description of the subordinator *de* as a "modifier marker that appears after an adjective" is patently inadequate, given the well-known fact that in DPs of the form 'XP *de* NP', *de* combines with all kinds of modifier XPs, i.e. NPs, PPs, PostPs, QPs, complement clauses and relative clauses (cf. chapter 5.1.1 above).

8.5 Why typological generalizations are not part of grammar

Notwithstanding the serious drawbacks just outlined, which considerably reduce the utility of data bases such as WALS, it is difficult to escape the temptation to use a statistical tendency provided by WALS when it happens to confirm one's own claim. I am not an exception, since I have cited the existence of about 200 languages (in a corpus of a bit more than 1500 languages) lacking cross-categorial harmony between VO or OV order and the sentence-initial vs sentence-final position of yes/no question particles, in order to make Chinese look less "exceptional". However, in the light of the discussion in section 8.5.2 below, it should be obvious that a given structure is proven to comply with general constraints on human languages *qua* its very existence; if it weren't possible, it would simply not be there and would not be acquirable by the child learner at all. Whether the same structure is attested for other languages or not

and whether these other languages are of an identical word order type or not is completely irrelevant.

8.5.1 Formal theories and typological data bases

In spite of the numerous problems with WALS discussed above, more and more studies in the generative grammar framework refer to WALS in order to back up certain claims. This is completely anachronistic , however, insofar as functional categories are quasi absent from Greenberg (1963) and its subsequent development in WALS. While the absence of functional categories in Greenberg (1963) has purely historical reasons, having been written before the advent of functional categories in the wake of Abney (1987), this evidently does not apply to WALS itself. For example, as discussed in section 8.4 above, the category "complementiser" does not figure among the features included in WALS. Instead, one has to fall back on feature 92a "polar question particle" and feature 94a "adverbial subordinator", where polar question particles might in fact comprise interrogative force heads such as *ma* in Chinese matrix questions. By contrast, *adverbial subordinator* has been shown to be a cover term for different categories: clause-selecting prepositions in English (*after, before*) and in Chinese (*yīnwèi* 'because', *zìcóng* '(temporal) since'; complementisers in English (*that, if*), and sentence-level adverbs in Chinese (*rúguǒ* 'if', *suīrán* although') (cf. section 8.3.4.3 above). This does not, however, prevent Biberauer, Newton and Sheehan (2009) and Biberauer and Sheehan (2011) from equating WALS' *adverbial subordinator* with the category *complementiser* and presenting the statistics given in WALS (279 VO languages with a sentence-initial adverbial subordinator vs only 2 with sentence-final adverbial subordinator) as evidence for their claim that a head-final (subordinating) CP is incompatible with VO word order.[14] They

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14 In fact, Biberauer, Newton and Sheehan (2009) not only fail to acknowledge the categorial heterogeneity of the term *adverbial subordinator*, but also neglect the word vs affix status of the items discussed. As explained by Dryer (2008b) in his comments on that feature, for certain languages, case suffixes are included as well, such as e.g. the instrumental *-inda* combining with gerunds to form 'because' clauses in Kannada (Dravidian, India).

(i)   Kannada (Sridhar 1990: 74); example 12 of feature 94 by Dryer in WALS
        Bisilu hecca:giruvudar   -inda
        heat   much.ADV.be.N.PST.GERUND.OBL-INSTR
        'since it's very hot'

Cantonese figures among the (S)VO languages with mixed order (sentence-initial and -final adverbial subordinator), whereas Mandarin Chinese is not included in the sample of languages examined by Dryer (2008b).

restrict their claim to subordinating C, because they are aware of the fact that within Rizzi's split CP approach the SFP occurring in Chinese matrix sentences are analysed as different types of C. But even narrowing down their claim to *subordinating* C cannot help to dismiss Chinese as potential counter-evidence, given the existence of the exclusively non-root C *de* (in the propositional assertion) and *dehuà* (in conditional clauses) discussed in chapter 7.3.1 above.

While the incompatibility of VO order with a head-final CP echoes the potential universal postulated by Dryer (1992, 2009), *viz.* that only OV languages have a sentence-final complementiser (cf. sections 8.3.4.2 and 8.3.4.3 above), for Biberauer, Newton and Sheehan (2009) and Biberauer and Sheehan (2011), this is just one of the many consequences of the *Final-over-final constraint* (FOFC), which in general excludes a head-final projection above a head-initial one.[15] In fact, the entire research program arguing for the existence of the allegedly universal FOFC is for a large part based on data in WALS as supporting evidence. This is, however, highly problematic, because in many cases there exists no *tertium comparationis* between the often vague semantic labels used for identifying categories in WALS and the highly sophisticated syntactic analyses offered as evidence in favour of FOFC.

The difficulty of transposing the labels used by WALS into a more stringent theoretical framework is particularly striking in the case of functional categories. Functional categories can in turn induce some serious complications for the concept of cross-categorial harmony. Let us take the Chinese nominal projection as an example. When examined more closely, the so-called subordinator *de* turns out to be an instantiation of different functional heads within the nominal projection, among them light *n* and Determiner (cf. Paul [to appear] and the brief discussion in chapter 5.2.3 above). Leaving the details of this analysis aside, what is important for our purpose here is that only the lexical domain NP is head-final in Chinese, as evidenced by modification without *de* (cf. [35]); the projections headed by *de*, however, are head-initial (cf. [36]).[16]

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15 For expository reasons, I simplify here. For the various successive versions of FOFC, cf. Biberauer, Holmberg and Roberts (2007, 2008, 2014), Biberauer, Newton and Sheehan (2009) and Sheehan (2013).

16 At first sight, this analysis looks like the one proposed by Simpson (2001, 2003). However, Simpson's (2001) analysis of *de* as *Determiner* hinges on postulating an underlying clause for every XP, a move necessary in order to transpose Kayne's analysis (1994) of relative clauses in English (cf. (i)) to all nominal modification structures in Chinese. Accordingly, a DP such as *wǒ de shū* 'my book' in (iii) is derived in the same way as *wǒ zuótiān mǎi de shū* 'the book I bought yesterday' with a relative clause as XP as in (ii), *modulo* the presence of a covert possessive verb (noted *e*) in (iii):

(35)   a.   *yī jiàn [*NP* zāng/ gānjìng yīfu]*   (= [20] above)
       1 CL   dirty/ clean   dress
       'a dirty/clean dress'

  b.   *yī zhāng [*NP* mùtóu zhuōzi]*
       1 CL   wood table
       'a wooden table'

(36)   *[*DeP* Zhāngsān [*De'* de [*nP* Lǐsì [*n'* de [*NP* zhàopiàn]]]]]*
          Zhangsan   SUB   Lisi   SUB   photograph
       'Zhangsan's photograph(s) of Lisi'
       [not: 'Lisi's photograph(s) of Zhangsan']

As indicated in (36), the argument of N bearing the theme role, *Lisi*, is hosted within *n*P, while the possessor *Zhangsan* occupies Spec,DeP. The unavailability of the interpretation 'Lisi's photograph(s) of Zhangsan' indicates that an argu-

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(ia)   *[*DP* the [*CP* [*Comp* that] [*IP* Bill liked picture]]]*   Simpson (2001:150-52)
(ib)   *[*DP* the [*CP* picture*i* [*C'* [*Comp* that] [*IP* Bill liked t*i*]]]]*
(iia) *[*DP* de [*CP* [*Comp* Ø] [*IP* wǒ zuótiān mǎi shū]*
       SUB   1SG yesterday buy book
(iib) *[*DP* de [*CP* shū*i* [*C'* [*Comp* Ø] [*IP* wǒ zuótiān mǎi t*i*]]]]*
       SUB   book   1SG yesterday buy
(iic) *[*DP* [*IP* wǒ zuótiān mǎi t*i*]*k* [*D'* [*D* de] [*CP* shū*i* [*C'* [*Comp* Ø] t*k*]]]]*
       1SG yesterday buy   SUB   book
(iiia) *[*DP* de [*CP* [*Comp* Ø] [*IP* wǒ I° [*VP* e shū]]]]*
       SUB   1SG   book
(iiib) *[*DP* de [*CP* shū*i* [*Comp* Ø] [*IP* wǒ I° [*VP* e t*i*]]]]*
       SUB   book   1SG
(iiic) *[*DP* [*IP* wǒ I° [*VP* e t*i*]*k* [*DP* de [*CP* shū*i* [*Comp* Ø] t*k*]]]*
       1SG   SUB   book

Note, though, that an analysis systematically positing clausal sources for modifiers fails in the case of XPs that are never able to function as a predicate, such as non-predicative adjectives (cf. chapter 5.1.1) and PPs (cf. chapter 3.3). For a detailed refutation of proposals positing an underlying clause for every modifier XP, cf. Paul (2012). Furthermore, Simpson's analysis cannot account for *several* instances of *de* within the same nominal projection (cf. [36]). Cases such as (36) below imply that the feature make-up of the different instantiations of *de* is not completely identical, but partly depends on its position in the hierarchy of the nominal projection and on the nature of the modifier XP in its specifier. What remains constant for all instances of *de*, though, is the EPP feature requiring merging of an XP in Spec, DeP; a DeP with an empty specifier position, *[*DeP* Ø [*De'* *de* NP], is ill-formed.

ment of N must be realized within *n*P, where *n*P is the next higher projection above the lexical domain NP and below DeP.[17]

Does this new analysis reduce the cross-categorial disharmony between the head-initial VP and the nominal projection in Chinese, now that only the lexical domain NP is head-final? Or is cross-categorial (dis)harmony measured between lexical categories only, to the exclusion of functional categories, given the crucial role of the concept of verb patterner? Evidently, grammatical models using a large array of functional categories must raise and answer these questions before being able to adduce statistical tendencies from WALs, in order to know whether there exists a(ny) *tertium comparationis*. The preceding discussion where a few phenomena were examined in detail and compared to their treatment in WALS does not leave much room for optimism.[18]

To conclude this brief discussion on the role of functional categories in cross-categorial harmony, let us turn to Japanese. Since Greenberg (1963), Japanese has been known as the rigid subtype of OV languages, on the grounds of its pervasive cross-categorial harmony with respect to head-finality. The OV order is paralleled by the existence of postpositions (to the exclusion of prepositions), by the sentence-final position of question particles, and by the order 'XP (*no*) noun' – presented as head-final NP – where XP includes modifiers, complement clauses and relative clauses.

(37)   a.   *kuroi   boosi*
            black   hat
            'a black hat'

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17 An analysis of *de* as *n* was already proposed by Niina Ning Zhang (1999: 38, [28]):

(i) *[DP nà [NumP sān [ge [nP mài yīnliǎo   de]]]] zǒu   -le*
        that   3   CL   sell beverage SUB   leave -PERF
        'Those three beverage sellers have left.'

However, given the interpretational differences observed in (36) for Spec,*n*P vs Spec,DeP, an overall analysis of *de* as *n* cannot be successfully implemented (cf. Paul [to appear] for further discussion).

18 This is not to say that WALS excludes grammatical items from its features. Upon closer scrutiny, however, the presentation of that grammatical item will only partly overlap with its analysis as a functional category in current syntactic theories. The category *Determiner* is a good example. Chapter 88 (section 3) in WALS on the "order of demonstrative and noun" makes reference to the analysis of the English definite article *the* and demonstrative pronouns as *determiners*, but not to genitive *'s* and *of* currently also assigned *Determiner* status in English. Furthermore, article-less languages are said to lack that category. However, both Chinese and Japanese provide evidence for a functional projection D(e)P above the lexical domain NP, headed by *de* and *no*, respectively.

b. *Erika no boosi*
   Erika no hat
   'Erika's hat'

c. *[DP yuubokumin [D'[D no] [nP tyuubokumin*
   nomad   NO
   [n'[DP tosi [D' no [NP ttosi hakai]]]]]]
        city   NO   destruction
   'the nomads' destruction of the city'   (Whitman 2001: 85, [14])

However, as argued in Whitman (2001), the item *no* is best analysed as realizing
the functional category *Determiner* taking an NP complement to its right. As a
consequence, the nominal projection in the OV language Japanese is as mixed
as in the VO language Chinese, displaying a head-final NP and a (recursive)
head-initial DP. The pervasive cross-categorial harmony postulated for Japanese
thus does not exist to the extent assumed so far. On the contrary, in addition to
no, the projection headed by the nominative *ga* turns out to be head-initial as
well (cf. Whitman 2001).

   To summarize, taking into account functional categories in addition to
lexical categories often results in quite a different picture. This is not only
because correlations were initially established between the verb and other,
exclusively lexical categories, but also and especially, because taking into
account functional categories amounts to introducing the notion of *hierarchy*,
contrasting with the purely linear approach adopted in WALS. In other words,
the major problem with data bases like WALS is *not* so much their being
"surfacy"; on the contrary, the cross-categorial correlations obtained are often
precisely not made on the basis of surface, but by systematically glossing over
grammatical items such as *de* in Chinese. As a result, head-final NPs with an
adjectival or nominal modifier [NP A/N N°] (cf. [39a], [39b]) are incorrectly
treated as on a par with head-initial DePs of the form [DeP XP [De' *de* NP], for the
simple reason that among many other phrases (QP in [38a], PP in [38b] etc.), XP
in DeP can also be an adjective or a noun (cf. [38c] and [38d]):

(38) a. *sān -ge [QP wǔ suì] de háizi*
         3 -CL 5   year SUB child
         'three five-year old children'

   b. *[PP guānyú tiānwénxué] de zhīshì*
         about   astronomy SUB knowledge
         'knowledge about astronomy'

    c.   *yī zhāng [$_{DeP}$ mùtóu [$_{De}$, de [$_{NP}$ zhuōzi]]]*
          1 CL   wood   SUB   table
          'a wooden table'

    d.   *yī jiàn [$_{DeP}$ zāng/ gānjìng [$_{De}$,de [$_{NP}$ yīfu]]]*
          1 CL   dirty/ clean   SUB   dress
          'a dirty/clean dress'

(39) a.   *yī jiàn [$_{NP}$ zāng/ gānjìng yīfu]*
          1 CL   dirty/ clean   dress
          'a dirty/clean dress'

    b.   *yī zhāng [$_{NP}$ mùtóu zhuōzi]*
          1 CL   wood table
          'a wooden table'

While it is comprehensible that data bases such as WALS or TerraLing, aimed primarily at a broad coverage, do not cover subtle semantic differences of the type observed for 'A/N N' vs 'A/N *de* NP' (cf. chapter 5.2 above), it is nevertheless indispensable to take into account the existence of two different structures for nominal projections, with and without *de*.

    In any case, the discussion in the following section, where the concept of cross-categorial harmony is "deconstructed", i.e. shown not to be a principle of grammar, demonstrates that the question whether functional categories should in the end be included in "calculating" cross-categorial harmony or not turns out to be an idle one.

8.5.2 Deconstructing cross-categorial harmony as a principle of grammar

8.5.2.1 Newmeyer (2005): "The irrelevance of typology for grammatical theory"[19]

As pointed out by Newmeyer (2005: 38), generative grammar became explicitly interested in typology with the introduction of the *Principles and Parameters* model initiated by Chomsky's (1981) *Lectures on government and binding*. The main idea was to account for cross-linguistic variation by a limited set of

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19 This section is based on chapter 3 of Newmeyer (2005) and adopts as its heading his "deliberately provocative title" (cf. Newmeyer 2005: 103).

parameters incorporated into Universal Grammar.[20] The parameter most closely linked to the concept of cross-categorial harmony was the *Head parameter* (cf. Stowell 1981), which states that in a given language complements are consistently to the right or to the left of the head. English and Japanese were cited as examples *par excellence*; in English, complements systematically follow the relevant heads, whereas in Japanese, complements systematically precede the relevant heads, giving rise to the observed clustering of VO order, prepositions adjective – complement order etc. for English and OV order, postpositions etc. for Japanese.

Importantly, the head parameter was thought to be visible to the child learner, i.e. an English learning child would set the head parameter to the value "head-initial", while a Japanese learning child would choose the value "head-final". The head parameter thus represented a way within generative grammar to give a theoretical foundation to the cross-categorial correlations observed in Greenberg (1963), by formulating them as a principle of grammar, acquirable by the child. Note that typological consistency in terms of a uniform head directionality was assumed to hold at the level of D(eep) structure, whereas the often observed mixed head directionality on the surface was the result of optional movement rules relating D-structure to surface structure (cf. Newmeyer (2005: 59). Evidently, this mode of explanation became unavailable in the subsequent model of generative grammar that dispensed with the D-structure vs S-structure distinction, i.e. the *Minimalist program* (cf. Chomsky 1995b). In addition, it had become clear in the meantime that even with the D-structure vs S-structure dichotomy the non-uniform head directionality observed for numerous languages could not be explained. The well-known two types of genitive in English, postnominal *of* and prenominal *'s*, illustrate such a case, for plausibly, at no point in the derivation of *John's book* does the genitive *'s* follow the noun and show the order noun – genitive as expected for a VO language (and exemplified by the *of* genitive: *the book of my favourite author*). The reverse case exists as well, i.e. languages that look more consistent on the surface than in their underlying D-structure. According to Newmeyer (2005: 110), German and Dutch are good examples here: because of the requirement that the finite verb occupies the second position in main clauses, there exist quite a number of surface SVO sequences, consistent with the head-complement order observed for e.g. nouns

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20 Newmeyer (2005, chapter 2) provides an extensive discussion of the numerous parameters proposed within (the successive versions of) generative grammar, such as the *Null subject parameter,* the parameter determining the directionality of case assignment and theta-role assignment (uniformly to the left or to the right) etc.

and prepositions. This contrasts with the underlying verb-final character, visible in subordinate clauses and in turn consistent with e.g. postpositions. Many more examples of the German type could be mentioned, i.e. languages where the mixed head-complement directionality cannot be derived, irrespective of the level chosen to represent the relevant word order type (cf. Newmeyer 2005, section 3.3). Suffice it to point out that the problems for the head parameter just outlined were augmented by the observation that uniform or non-uniform head directionality was found to have no influence whatsoever on acquisition. Quite on the contrary, the acquisition of basic word order is quite early for both "head-consistent" and "head non-consistent" languages alike. As reported in Newmeyer (2005: 100), French children display the correct order 'subject verb adverb object' (indicative of verb raising to a category above vP) from the earliest multi-word utterances on (cf. among others Déprez and Pierce 1993; Meisel and Müller 1992), while English children have the order 'subject adverb verb object' and never display verb raising (cf. among others Stromswold 1990, Harris and Wexler 1996). Finally, German children manifest solid knowledge of V2 order (cf. among others Meisel 1990, Clahsen and Penke 1992, Poeppel and Wexler 1993).[21] All this led to the conclusion that the head parameter cannot be part of the grammar to be acquired, given that it is not present in the data available to the child, but motivated by and based on cross-linguistic tendencies observed in typological studies (also cf. Hale 1994, 1998, 2007).

8.5.2.2 Whitman (2008): Greenberg's (1963) universals revisited

Like Kayne (1994) and Newmeyer (2005), Whitman (2008) rejects the head parameter as part of universal grammar. He goes a step further and argues that Greenberg's (1963) universals in fact must be subdivided into three different classes of generalizations, only two of which are indeed potential universals, contrasting with the third group, i.e. cross-categorial correlations.

Among the forty-five universals proposed by Greenberg (1963: 110–113), fifteen involve cross-categorial correlations, as exemplified by universals 3 and universal 4.

(40)   a. Universal 3
          Languages with dominant VSO order are always prepositional

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21 Chinese sentence-final particles, realizing different subprojections of a head-final CP (cf. chapter 7 above), are acquired well before the age of two years, against the background of SVO order (cf. Thomas Hun-tak Lee et al. 2005).

b. Universal 4
   With overwhelmingly greater than chance frequency, languages with normal SOV order are postpositional.

Irrespective of whether they present themselves as statistical (*with overwhelmingly greater than chance frequency*) or as absolute (*always*), the crucial property of cross-categorial correlations underlying the concept of cross-categorial harmony is that they "reference the internal properties of two or more categories irrespective of their relationship in a particular structure" (Whitman 2008: 234). In other words, the correlations postulated between SVO order and prepositions on the one hand, and that between SOV order and postpositions, on the other, are supposed to hold *in abstracto*, irrespective of whether a sentence actually contains an adposition or not. The underlying assumption is that cross-categorial correlations – based on the comparison of languages – enable the linguist to predict properties from the basic word order type itself, without e.g. ever having encountered any adposition in the language at hand.

As outlined above, it is this characteristic that makes it impossible for the child to know about and hence to acquire cross-categorial correlations. Furthermore, increasing the sample of languages examined leads to their invalidation; as seen in (34) above, WALS has fourteen OV languages with prepositions and forty-two VO languages with postpostions, thus adding to the one counter-example cited by Greenberg (1963: 103) himself (cf. Whitman 2008: 238).

If cross-categorial correlations are not part of the synchronic grammar to be acquired by a child, how can we then explain their relative statistic weight? According to Whitman (2008), the key to this statistical predominance is to be found in language change. More precisely, if languages consistently reanalyse adpositions from verbs, we obtain prepositions for VO languages and postpositions for OV languages, the adpositions maintaining the hierachical relation between head and complement of their verbal source (cf. Whitman's [2000] *Conservancy of structure constraint* discussed in chapter 2.2.2.5 above). However, if adpositions are reanalysed from both verbs and nouns, as in the case of Chinese, we obtain a "mixed" category adposition with prepositions and postpositions; the latter are not verb patterners, hence they are disharmonic with VO order.[22]

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22 Note that there are *no* denominal prepositions in Chinese, as to be expected under Whitman's analysis and against the background of the head-finality of NP throughout the history of Chinese up to the present.

Visibly, reanalyses from a verbal source are common enough across time and languages to have been noted as a typological tendency since Greenberg (1963). On the other hand, reanalyses from non-verbal sources are attested as well, as witnessed by the "exceptions" to cross-categorial harmony; the simple fact that these "exceptions" increase with the number of languages examined in typological surveys puts forward the fundamentally statistical nature of cross-categorial harmony. This is precisely what we observe in the case of Chinese: since Chinese was not included in the language sample on the basis of which (most of) these correlations were established, it is not surprising that many of them do not hold for Chinese, such as the association of VO languages with exclusively sentence-initial complementisers.

Unlike cross-categoral correlations, the two other classes of generalizations in Greenberg (1963), i.e. the *hierarchical generalizations* and *derivational generalizations*, refer to the position of two or more categories within a *single* structure and might indeed represent potential universals acquirable by the child learner as part of synchronic grammar. In Whitman's (2008: 234) terms, "*hierarchical generalizations* describe the relative position of two or more categories in a single structure", and "*derivational generalizations* describe the relative position of two or more categories at the end of a derivation". Universal 14 illustrates a *hierarchical generalization*:

(41) Universal 14
      In conditional statements, the conditional clause precedes
      the conclusion as the normal order in all languages.

While this universal is formulated in terms of linear order, it can be transposed into a hierarchical structure, where the conditional clause occupies a higher position than the consequent clause. More precisely, this is possible when at an appropriate level of representation conditionals are generated in the specifier position of a projection that contains the consequent clause:

(42)   *[$_{S'}$ If conditionals are specifiers of S' [$_S$ they precede the consequent]]*
                                                              (Whitman 2008: 235, [3])
As emphasized by Whitman (2008: 235), the notion of "appropriate level of representation" is important here, because as is well-known, universal 14 does not hold as an absolute universal about surface order across languages.

The notion of "appropriate level of representation" is also crucial for *derivational generalizations*, where the relative position between two categories is obtained as the result of movement, as exemplified in universal 6:

(43) Universal 6
      All languages with dominant VSO order have SVO as an alternative
      or as the only alternative order.

Positing an underlying SVO order, VSO is derived by verb raising over the subject. The alternative order SVO mentioned by Greenberg is expected in contexts where verb raising is blocked, as is the case in non-finite clauses (cf. among others Emonds 1988, McCloskey 1991). Universal 6 thus reflects the mapping between two levels of representation which may or may not involve movement.

    Whitman (2008) sheds a new light on the universals proposed by Greenberg (1963) and demonstrates their heterogeneity. Only hierarchical and derivational generalizations turn out to be potential universals, hence principles of synchronic grammar, whereas cross-categorial generalizations are the result of language change and hence have a statistical nature. Accordingly, cross-categorial harmony presents a statistical tendency (observable for the linguist in crosslinguistic comparison); it is not a principle of grammar to be acquired by the child learner.

8.5.3 Interim summary

While the knowledge of different languages is important for the linguist, this type of knowledge is not available for the child and hence does not play any role in language acquisition. As a consequence, statistical patterns obtained from language comparison such as cross-categorial (dis) harmony are not part of (universal) grammar, i.e. a child does not know whether the language s/he is acquiring is a harmonic or disharmonic one. This is confirmed by acquisition studies showing that so-called disharmonic languages do not present more difficulties for the child learner than so-called harmonic languages (cf. the references in section 8.5.2.1 above).

8.6 Concluding remarks

Based on the analyses presented throughout the book, this chapter has assembled the arguments showing that the disharmonic nature of Chinese is real and cannot be remedied. Chinese thus confirms Whitman's (2008) position that cross-categorial generalizations are not part of universal grammar, but the result of well-documented patterns of language change, hence statistical in nature. Exceptions to "harmonic" situations as amply illustrated by Chinese

(and many other languages) are therefore precisely what we expect; they arise when the historical origin of an item is different from the one observed in the languages having served as the basis for the generalization.

Given that cross-categorial harmony is not a principle of grammar, but an observation obtained by the linguist when comparing languages, it cannot and must not be used as an often tacit evaluation metric for competing synchronic analyses in a given language. In other words, an analysis leading to a "disharmonic" situation is as sound as one leading to a "harmonic" situation.

Furthermore, disharmonic states are not "unstable" and liable to change into "more stable harmonic" ones. While this follows on principled grounds (given the "extra-grammatical" status of cross-categorial harmony) and in fact does not need any "proof", Chinese with its long-documented history nevertheless comes in handy. For example, the combination of VO order, head-final NP and prepositions is attested since the earliest texts (13th c. BC), and that of VO order and head-final CP since the 6th c. B.C.; prepositions and postpositions have co-existed for nearly 2000 years now, i.e. since the 2nd c. (cf. Djamouri and Paul 1997, 2009; Djamouri,Paul, and Whitman 2013 a, b).

Notwithstanding the fact that most generative syntacticians will subscribe to the role of acquisition as the cornerstone of linguistic theorizing (insofar as any theory must be compatible with the constraints observed for language acquisition), they nevertheless differ in the role they assign to typology and, in particular, to cross-categorial harmony. Only a few endorse the radical position defended by Newmeyer (2005) and Whitman (2008), which is the one adopted here, *viz.* that cross-categorial harmony and with it the head parameter are not principles of grammar and should therefore not be built into a syntactic theory. On the contrary, quite a few endeavour to integrate results from typological surveys (mostly cross-categorial correlations) into the syntactic theory itself.

For example, the "disharmony" between VO word order and a head-final CP plays a major role in the various successive versions of Biberauer, Holmberg and Roberts' (2007, 2008, 2014) *Final-over-final constraint* (FOFC). The FOFC, presented as a *derivational* generalization in the sense of Whitman (2008), rules out certain combinations of head-final and head-initial order *across categories*; in particular it excludes structures where a head-final projection dominates a head-initial one (cf. section 8.5.1 above). Given that a number of VO languages, among them Mandarin Chinese, display sentence-final particles (SFPs) which violate the purportedly universal FOFC when analysed as complementisers, Biberauer, Holmberg and Roberts claim that clause-final particles are "categorially deficient" and therefore do not count as evidence against the FOFC (also cf. Biberauer and Sheehan 2011). However, as argued for in chapter 7, the fixed ordering of the different subprojections above TP 'Low CP < ForceP < AttitudeP'

in the Chinese split CP can be neatly captured in terms of selectional restrictions imposed by the SFPs as heads on their complement (i.e. TP or a phrase headed by an SFP of a lower subprojection). In other words, there is nothing deficient in Chinese SFPs, but they select and project like other heads and must therefore be analysed as such.

Similarly, Cinque (2010a, 2013) elaborates several proposals of how to integrate results from typology into syntactic theory. This is either done by "economizing" the disharmonic category (e.g. the postposition in the VO-language Gungbe; cf. Cinque 2010a: 15, footnote 9) or by having cross-categorial harmony operate on a more abstract level. The latter is necessary, because as observed above and likewise noted by Cinque (2013: 47–49), Dryer's (1992, 2009) correlation pairs do not hold up under further scrutiny and are invalidated by an increasing number of languages. Instead, Cinque (2013: 49) proposes to establish idealized harmonic word order types and to observe "to what extent each language departs from them". In other words, these harmonic orders are "abstract and exceptionless, and independent of actual languages, though no less real" (Cinque 2013: 49). Here Cinque basically pursues Hawkins's (1980, 1982) approach where an increase in deviation from the "ideal" harmonic ordering is said to correlate with a decrease in the number of languages exemplifying this type (cf. section 8.2.1 above).

The interest shown by major journals in the question whether and how syntactic theory should incorporate results from word order typology (cf. among others the special issues of *Linguistic Typology* 11 [2007] and *Lingua* 130 [2013]) likewise reflects the importance of this debate for the field. Quite a few contributions (among them Baker and McCloskey 2007) maintain the head parameter and express their hope that more parameters of that kind emerge, in order to capture typological generalizations in terms of principles of grammar.

This small sample illustrates the great influence the concept of cross-categorial harmony has exerted in the past and is still exerting. Visibly, it is not yet generally accepted that despite its importance in the last decades, cross-categorial harmony nevertheless cannot be assigned the status of a principle of universal grammar.

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