A grammar of Standard Mandarin Chinese

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Chapter 1

Introduction

Box 1.1: Topics to be covered

- Relative clauses
- Lexical aspect and its relation with le zhe guo
- Relation with Middle Chinese
- More discussions on wordhood (and avoid using terms hinting at wordhood in the description)
- Def. of verb stem

1.1 History and classification

1.1.1 Early history

A pattern observable in the history of the Sinitic family is that divergent development and drastic loss of linguistic diversity happened alternately. Unlike the case of Tibetan, which has a East Bodish sister group, the modern Sinitic family has no sister group with a shared Pre-Proto-Sinitic ancestor. This suggests that even before the Shang dynasty (which was the earliest archaeologically demonstrable dynasty in the history of China), language uniformity to a certain extent was already in place.

The earliest evidence of what we can call Chinese is from oracle bone inscriptions and the transmitted text of 尚书 '*Book of Documents*', corresponding to the languages of Shang and Zhou dynasties, respectively. These, together with the phonetic components of Chinese characters and the rhyme patterns in 诗经 '*Book of Odes*', can be used to reconstruct Pre-Classical Old Chinese, which had typological features radically different from stereotypical "Sinitic" features (Baxter 2014). It should be noted that the languages of oracle bone inscriptions, the *Book of Documents*, and the *Odes* are clearly different, meaning that linguistic divergence had already appeared in the pre-Classical period, and reconstruction of Pre-Classical Chinese should consider the dialectal differences (Harbsmeier 2016, pp. 478-9).

The classical period started from the Spring and Autumn period and to late Han dynasty. Dialectal divergence was clearly still a thing during this period, but uniformity of at least the literary language already appeared: all transmitted texts, even

楚辞, are written in what looks like Classical Chinese (Harbsmeier 2016, p. 447), although regional phonological differences of this standard language are to be expected (Harbsmeier 2016, p. 488).

Whether

1.1.2 Middle Chinese

Being historically accurate or not, we can at least say that Middle Chinese, as described in the rhyme books and rhyme tables, *is* a well-defined proto-language in terms of Neogrammarian historical linguistics, because the phonology modern Sinitic languages can be derived by regularly applying sound change laws to it.

1.2 Methodology

This part, printed in smaller letters, is for linguistic nerds. Culicover (2004) criticizes Huddleston and Pullum (2002) for its lack of explicit connections to contemporary syntactic theories, and we decide to specifically add a section on how our methodology compares to contemporary theoretical and descriptive linguistic frameworks. Readers not interested in theoretical linguistics can feel free to ignore this section.

1.2.1 Theoretical framework

The underlying theoretical framework of this grammar is inspired by Distributed Morphology (Siddiqi 2009) and Cartography (Cinque 1999). This is to say, we assume that

(a) a grammatical construction is made of a *root* surrounded by a hierarchy of *functional heads* (corresponding to grammatical features and categories in traditional grammar) and their specifiers (in the generative syntactic sense), and

(b) the functional heads often follow a relatively cross-linguistically stable hierarchy, which strongly influences the linear order of auxiliaries, adverbs (which are in specifier positions), etc. and their scopes (e.g. Fig. 3.6), and

(c) post-syntactic morphological and phonological operations can bring roots and functional heads together, which is subject to *phase theory* (or similar cyclic constraints of syntactic derivation), which then are subject to phonological realization, and

(d) the whole process is guided by the lexicon, in which the list of roots, idiomized (i.e. *lexicalized*) meanings of constructions, and details of phonological realization (which, by the way, gives us subcategorization: a root that can only be phonologically realized with the TRANSITIVE functional head which introduces the direct object is a transitive verb; see Siddiqi 2009), and the last two lists in theory can be independent to each other (§ 1.2.4).

Grammar, in this framework, is about how roots are "dressed up" by grammatical constructions, and grammatical constructions can be fully described in terms of hierarchical organization of grammatical categories based on constituency relations, and their phonological realization. The framework adopted here therefore has a clear lexical/functional distinction, which can be tested by checking whether a formative is within a fixed hierarchy (e.g. *have been being observed* and the similar ordering of tense, aspect and modality adverbs in English:

TENSE > PERFECT > PROGRESSIVE > PASSIVE; in Mandarin see e.g. § 3.2.3.1). Certain gradience however is allowed because multiple analyses may appear at the same time in the mental grammar of a speaker of the language.

Whether the current version of Distributed Morphology of Cartography is literally correct or not is far beyond the scope of this grammar. Instead, we rely on the general idea of them to build an *informal* descriptive framework which enables cross-linguistic comparison.

1.2.2 Relation with descriptive grammars

The framework above may seem strange for descriptive linguists. Here we "explain" concepts in descriptive grammars in terms of concepts in the framework of Distributed Morphology plus Cartography.

(a) Definition of head. *Heads* in § 1.2.1 are all *functional* heads, i.e. (markers of) grammatical categories. Under the more traditional definition of **head**, we have *noun* phrases and *verb* phrases, and we have constructions without heads, like coordination constructions. In Distributed Morphology and Cartography, the traditional definition of *head* is also well-defined, as it corresponds to the the center root of a construction surrounded by a hierarchy of functional projections, which, of course, cannot always be non-ambiguously defined in constructions like coordination. We also use the term *head* to refer to constituents that contain the core of a construction: thus the central nP or the central NumP in a DP is known as the *head* in the traditional grammar sense. This is the terminology in Huddleston and Pullum (2002).

This traditional usage of the term *head* appears in the generative literature as well: Paul (2014, p. 120), for instance, talks about the *head noun* of something he calls a DP. The two definitions of *head* overlap when there is grammaticalization: a so-called prepositional phrase can be a complement-taking adverb phrase in which the *head preposition* is a head in the traditional sense, or an analytic case phrase, where the *head preposition* is actually a case particle and a functional head. The former can be reanalyzed as the latter. On the other hand, some functional heads, like sentence final particles (see e.g. Fig. 3.1), are never recognized as heads in traditional grammars: they are instead called *markers* in grammars like Huddleston and Pullum (2002).

(b) Constituency and dependency relations. In mainstream generative syntax, constituency (or more abstractly, c-command relations) is the only primitive for structure building. Besides that, because of phase theory (or alternative theories aiming to explain the relevant phenomena), constituency is *cyclic* or "layered": thus in a clause, the vP is finished first, followed by TP and CP. This provides an alternative way to define constituents, in which the main verb (on the notion of what is a verb or more generally what is a word, see below), and the tense, aspect and modality markers, but *not* arguments, are put into one unit, often called the verb phrase (Quirk et al. 1985, p. 39). Still the hierarchical relations between the functional heads (e.g. TENSE > PERFECT > PROGRESSIVE) exist and need to be accounted for, so we see discussions on them in Quirk et al. (1985, pp. 79,121). The flat-tree analysis in Quirk et al. (1985, p. 39) can be adopted in our framework too, although this grammar will not heavily make use of the flat-tree analysis.

Another issue is the relation between constituency and dependency. The two are basically two notations for the same thing (Boston, Hale, and Kuhlmann 2009). Here hierarchical relations can be represented by assigning "closeness" values to dependency arcs. Dependency analyses are particularly wieldy when movements are frequent. Huddleston and Pullum (2002, p. 55), for instance, mentions *indirect complements*, which are originally a part of the core argument structure of an adjective in a noun phrase and

has to appear post-nominally. Its relation with the adjective that licenses it therefore is ideally reflected by a dependency arc in a descriptive grammar, although a movement-based constituency analysis is of course possible.

(c) Pre-defined grammatical constructions. In lexicalist schools of generative grammar, we have the X-bar theory, in which some heads are heads in the sense of (a). In lexicalist X-bar theory, the distinction between adjuncts, specifiers and complements are used to explain their differences in their syntactic behaviors. This distinction is absent in Cartography, as almost all things are specifiers, and the distinction is to be reinterpreted as the distinction between different types of specifiers. So the X-bar scheme can be seen as a pre-defined schema of grammatical constructions.

We can further derive more grammatical structures (like subject-predicate structures, predicator-object structures, coordination structures, and so on) by incorporating the vP-TP-CP and the nP-NumP-DP hierarchies into the X-bar scheme, which is exactly what is done in Deng (2010), which results in a descriptive formalism quite similar to that in Huddleston and Pullum (2002): we replace the label TopP by a *form* label *topic-comment construction*, and we replace SpecTopP by a *function* label *topic*, and nodes in the tree diagram are labeled like "sentence: topic-comment construction" or "topic: noun phrase"; on the other hand, phonological realization of functional heads do not have the form-plus-function labels: we only label them according to the grammatical categories they mark, like "evaluative particle [DELIMITATIVE]" (Fig. 3.1).[1] We should be cautious that in hierarchies described by Cinque (1999), there can be too many form labels, and sometimes we have to conflate them into things like *extended verb phrase* (Fig. 3.6). CompFP in [SpecFP [F CompFP]] may have a conventional *function* label as well (like *comment* in topic-comment constructions); otherwise we just call it the *head* (see (a); see e.g. Fig. 3.1 and Fig. 3.6).

In a surface-oriented tree diagram of an utterance, which roughly corresponds to the derivation tree after post-syntactic morphological operations, non-terminal nodes have gotten their labels like *sentence: topic-comment construction*, and terminal nodes corresponding to functional heads have gotten labels like DELIMITATIVE. Special attention needs to be paid to how to labeling content words, i.e. clusters of functional heads and roots gathered at one node of the derivation tree (this is related to morphological wordhood; § 1.2.3). In this grammar, we use terms *noun* or *verb* to refer to *morphological words* that have the n or v categorizers, or subparts of morphological words with functional heads introduced after the categorizer removed (which may be known as the **stem** or **lexeme**, depending on the grammatical tradition; these terms may also mean other things). The tree diagrams in this grammar reflect purely syntactic relations; thus, terms like *noun* or *verb* are not to appear in tree diagrams, and we simply only keep the function labels like *predicator* (i.e. the root selected by TransP or vP). Post-syntactic morphological operations are labeled separately, as is done in Fig. 3.8. An alternative notation is to use terms like *noun* or *verb* to label content word terminal nodes (which

[1] Culicover (2004) notes that this eliminates the necessity of functional heads, and that when describing a single language (by extending Huddleston and Pullum (2002) into what he calls GODZILLA-CGEL), the parameters apply to concrete, content items, not abstract functional heads. The reason the function head analysis is preferred (or, alternatively, the function-form analysis is preferred) is "it is a description of the way in which the Language Faculty behaves… [i]t is also a description of the possible relationships among these expressions." That's to say, if grammatical variances can be most easily captured by stipulating the existence or non-existence of certain functional heads and the morphological or phonological status of them (like whether C is "strong" enough to attract the main verb to it, or whether T is "weak" enough to lower to the main verb), then functional heads are preferred for theoretical linguistics. This however says nothing about what formalism to use when describing a specific language (§ 1.2.7).

always appear around either one functional head or a root). Of course, these terms conflate many different possible word structures (which sometimes have grammatical consequences; Siddiqi 2009, pp. 59-60). Constituency tree diagram based on the surface form is less wieldy when formatives in the content word originate both from syntax within the word and post-syntactic operations moving other functional heads to the word, although it's definitely doable (Fig. 3.9).

It can be verified that our framework does not strongly deviate from the so-called Basic Linguistic Theory (Dixon 2009), i.e. the grammatical framework used in most descriptive grammars. Our framework is also largely consistent with the framework in Huddleston and Pullum (2002), except the fact that Huddleston and Pullum (2002) do not make an explicit lexical/functional distinction: for instance, they first analyze all prepositions as if they are a content word class in chap. 7, and then go on to discuss grammaticalized prepositions from p. 647. On the other hand, Dixon (2009), despite its fierce attack on generative syntax (§ 1.2.7), advocates for analyses that are perfectly consistent with the descriptive framework in this section, where functional and content items are strictly separated (Dixon 2009, p. 49).

1.2.3 Wordhood

Because our framework is strongly inspired by Distributed Morphology, the notion of *words* do not have a primitive status in describing syntax in our descriptive framework. That's to say, all grammatical constructions and processes can in principles be described in terms of roots, constituency/dependency, without using any concept that implies an absolute word/phrase distinction.

We may still want to define wordhood syntactically, based on language-specific criteria. We should note difficulties of certain degrees are bond to appear. If wordhood is defined as a small constituency, where *constituency* means what the word means in mainstream generative syntax, then inflectional endings, and even voice markers, are *not* in the same word with the root (or otherwise the whole predicator-object phrase is to be recognized as a word), and if it's defined as a flat-tree constituent (see (b) in § 1.2.2), then how shouldn't *has been working* is a word?

Morphological words and **phonological words**, on the other hand, are well-defined, as the fact is cross-linguistically, roots and grammatical formatives in the abstract syntax are bundled into groups for phonological realization. Formatives brought together by **post-syntactic** operations form one morphological word: hence a verb word in English is a complex containing the verb root plus possible derivation affixes and also the tense suffix. It is also possible that first a bunch of formatives are gathered together, and later some other formatives join them: this is known as cliticization. Phonological words are to be defined according to prosody or domains of phonological rules.

It is less wieldy to use constituency trees based on the surface form to represent the scopes of grammatical categories represented by formatives in a morphological word. In § 3.2.4, (17), for instance, the verbal complement 完 has its scope over 做作业, and the aspectual suffix 了 has its scope over 做完作业. We can represent this fact in the way of Fig. 3.8, which, despite being largely surface-oriented, still involves invisible nodes in the syntactic tree.

Grammar is naturally divided into abstract syntax i.e. syntax proper and post-syntactic operations. We may want to call this distinction the syntax/morphology distinction, although syntax/morphology distinction in traditional grammar means something slightly different and this may cause confusion: some derivational morphology like compounding can be described using the same framework we use for prototypical phrasal syntax, as they are both mostly about the syntax proper, while what is commonly placed under the category of syntax, like verb fronting in question formation in English, can be explained by a V-to-C head movement,

which can be captured as a post-syntactic operation (Siddiqi 2009, p. 24). Unfortunately the term *realizational morphology*, which looks like a good name to emphasize the post-syntactic part of morphology, has been used to refer to the Word-and-Paradigm theory morphology, which is beyond the scope of this section.

One practical problem is whether we should talk about roots explicitly in constituency trees for derivational processes shown in this grammar. This is also related to theoretical issues, like whether it is necessary to allow root-root Merge without any functional heads (Zhang 2007), and whether in *grammaticality judgment*, given that the nominalizer *-ment* has scope over the whole form ('the action or result of judging grammaticality'), the form can be represented as something like *[[judge [[[grammatic] -al]$_A$ -ity]$_N$]-ment]$_N$*, in which *judge* at first appears as a root, which merges with *grammaticality*. The second option, even if true, does not necessitate appearance of the label *root*, because the categorizer n eventually is merged with *judge-* and in a surface-oriented constituency tree, which roughly corresponds to the derivational tree after post-syntactic operations, we can say that *grammaticality judgment* is a noun-noun compound (Box 3.8), although the second noun is formed *after* the constituent structure of the whole form is formed. A clearer example demonstrating this is *hard worker*, which, from semantic clues, likely has a structure of *[work hard]-er*, as *worker* in this form does not have its usual meaning. On the other hand, even if root-root merging is not truly permitted, some sort of functional projections that take two roots – none of which is categorized, unlike the case of *grammaticality judgment* in which the first branch is a nP – likely exist cross-linguistically, which gives rise to English *sick-bed*[2] or *spectr-o-scopy* (Di Sciullo 2005; Scher and Nobrega 2014).[3] In constituency trees for these forms, at least *spectr-* or *sick-* should be labeled as a root.

1.2.4 Lexicalization

We understand **lexicalization** in two aspects: morphological realization and semantic, corresponding to List B and List C in Distributed Morphology. An arbitrarily large grammatical unit, which is phonologically realized in a combinatorial way, can have an idiomized meaning: consider *kick the bucket*. A grammatical word *without* an idiomized meaning can be phonologically realized as a whole: thus *feet* is just $\sqrt{\text{FOOT}}$-NOMINAL-PLURAL, but it has an irregular form. The two are theoretically independent to each other, although idiomization often leads to *syntactic* reanalysis, often towards a simpler direction (and thus can be called syntactic fossilization). Note that being semantically idiomized has syntactic consequences, like reduced acceptability of certain movement operations.

Subcategorization (and more generally, preference of certain syntactic environments of a form) can be seen as a consequence of lexicalization in the morphological realization aspect: saying a verb is transitive is equivalent to say it can only be phonologically realized in the presence of a TRANSITIVITY feature (Siddiqi 2009). This implies that we should expect to see correlation between valency and inflectional morphology of certain forms. In *proofread* and *skim-read*, for instance, the transitive valency and the irregular past tense are both solely determined by the lexical properties of *-read*. This is also an instance of separation between morphological lexicalization (that *-read* alone is enough to determine transitivity and tense inflection) and semantic lexicalization (that *proofread* and *skim-read* are well-established words).

[2]There is no other construction in which the adjective *sick* appears to mean *sickness*, which means it's highly likely that *sick* in this form is licensed as a root, not a categorized adjective.

[3]Di Sciullo (2005) is based on a lexicalist formalism, but transferring the analysis to our root-and-functional head framework is easy (Scher and Nobrega 2014).

1.2.5 Derivation, inflection, parts of speech

All other concepts, like the derivation/inflection distinction or the argument/adjunct distinction, are in theory secondary, and in this grammar we do not attempt to do demarcations of this point, and merely focus on the relevant grammatical phenomena related to these distinctions.

The two types of lexicalization often converges into the concept of *lexemes*. Consider the structure [...DO [...TRANSITIVE $\sqrt{\text{HIT}}$]$_{\text{TransP}}$]$_{\text{vP}}$. This treelet has an established meaning 'to hit sth.', and post-syntactic morphological operations gather the three formatives, DO, TRANSITIVE and $\sqrt{\text{HIT}}$, together into one morphological word, and it gets realized as *hit* because of a corresponding lexical entry. The tense and aspect markers are phonological implemented in a regular way, So we say that there is a transitive verb **lexeme** *hit* stored in the lexicon, and markers tense, person, etc. are given as a **paradigm** of it.[4] Minor inconsistency of course exists, as indicated at the end of § 1.2.4, and also Box 3.2. In many languages, typically this can be resolved by introducing concepts like *word family*.

The concept of lexeme however implies that we have a clear derivation/inflection distinction, which is problematic. For instance, we may want to draw a line between derivation and inflection structurally according to the two definitions of syntactic wordhood above (§ 1.2.3), but this definition excludes any valency alternation from derivation. Or we may want to say that derivation is generally more lexicalized, but lexicalization is not a single parameter (§ 1.2.4), and many languages have productive derivational devices. Or we may want to say that derivation is correlated with layered morphology while inflection is correlated with template morphology, but layered inflection (consider Japanese) and template derivation all exist. Eventually, we find that the **derivation/inflection distinction** just reflects how close a grammatical category is to the root in one construction (template morphology is more likely to develop for relatively external categories in the TP projections), but how internal a grammatical category should be to be considered derivational is not clear. Our opinion is that such a distinction is generally not possible to make cross-linguistically. Hence the term *lexeme* does not always mean the same thing cross-linguistically.

A **part of speech** refers to a class of lexicalized items in the lexicon with shared features. When a derivation/inflection distinction is defined (per language-specific criteria), the lexicalized items in question are lexemes. Thus $\sqrt{\text{HIT}}$-TRANSITIVE-DO and $\sqrt{\text{RISE}}$-BECOME are both assigned the part of speech tag *verb*, because they prototypically appear at the center of clauses and can both receive endings *-s* and *-ed* and *-ing*. Whether we have a TRANSITIVE feature or not in the phonologically lexicalized entry dictates whether the clause is transitive, which gives rise to *subcategorization*, or in other words different *verb frames* (and also valency in other constructions). Functional formatives, in principle, do not need part of speech tags: in practice we often given them a tag so writing a dictionary becomes easier. The lexicon of different languages are organized in different ways, and therefore part of speech division expected has strong cross-linguistic variances. We also note that it's perfectly fine for parts of speech to have blurred boundaries, as they are not primitives in the structure of the lexicon. This is true for both lexical part of speech categories and so-called categories of functional formatives.[5]

Some languages, like Chinese, do not have rich morphology, and it leaves beginners an impression that these languages have no parts of speech in their lexicons. This, despite being theoretically possible, is highly implausible, as this implies that the meanings of root-affix tuples are also not deterministic: $\sqrt{\text{EAT}}$-NOMINAL, for instance, would be understood as the

[4] Note that here we assume a layered morphology of inflection, while template morphology which does not transparently show the hierarchy of functional heads is also possible, which however is not beyond the descriptive capacity of our framework (Bye 2020).

[5] This is one criticism Culicover (2004) raises against Huddleston and Pullum (2002). He notices that Huddleston and Pullum (2002) sometimes uses some evidence to justify categorization of one (sometimes functional) item while ignoring other evidence, and insightful questions, "what follows from the categorization?"

action of eating or something to eat if this were true, depending on the context. Mandarin definitely *has* part of speech divisions as this is not the case in Mandarin.

1.2.6 Arguments and adjuncts

The standard of being an **argument** can be defined according to criteria listed in § 3.2.3.3. This distinction is also impossible to define in pure structural terms, and shows strong cross-linguistic variances. We use the term **complementation** to refer to something taking an argument, and **modification** to refer to something taking an adjunct. As the boundary between arguments and adjuncts is blurred, the distinction between complementation and modification is also blurred.

1.2.7 Relation with previous works

The purpose of theoretical linguistics is to see the complexity class of human languages, while the purpose of descriptive linguistics is easier descriptions – at the expanse of having more "primitive" concepts which actually do not allow more possible languages being described. This grammar aims to strike a balance between readability and theoretical cross-linguistic comparisons.

We choose this framework for several reasons. First, Mandarin has a relatively mature structuralist description tradition, which is quite similar to that in Huddleston and Pullum (2002), and that it can be seamlessly incorporated into modern generative syntax has long been noticed (e.g. Deng 2010). Second, many descriptive linguists align themselves with the functionalist approaches to grammar, but this is more because of problematic *practices* in generative schools, like relying on often unstable acceptability judgments or overly focusing on complicated clauses. The actual *theory* they use however often depart from contemporary functionalist theories. The term *construction*, for instance, appears frequently in the descriptive and typological literature (it will frequently appear in this grammar, too), but it is much less frequently used in the sense of various schools of Construction Grammar: in typical language description works, a construction is often still analyzed in a decompositional and combinatorial way, Therefore, it makes sense to see how far structuralist analyses can go being informed by modern generative syntax.

1.2.8 Gradience

Quirk et al. (1985) frequently mentions gradience in grammar. We take grammatical gradience to be a heterogeneous concept.

Sometimes gradience is purely due to defective analysis: if two constructions are labeled in the same way, and one can participate in a certain syntactic process and the other can't, one may argue that the acceptability of that process is gradient. This however is purely an artifact of the grammarian being not careful enough, and means nothing besides the necessity of having more fine grained labels (see e.g. the discussion on the meaning of the term *extended VP* around Fig. 3.6).

A specific case of this type of "gradience" is what counts as a clause. A TP is more exposed to its syntactic environment than a CP. This doesn't mean that the concept of *clause* is gradient in the same sense that the real number axis is gradient: the "scale" of clause-ness may actually be discrete.

Another type of gradience, like frequency effects in fossilization, is indeed continuous. This however can be analyzed as existence of two or more competing grammars in the mind

of a native speaker, each of which are assigned a probability. The continuity observed in this kind of gradient phenomena does not invalidate discreteness of syntactic structures.[6]

Yet another type of gradience comes from dialectal differences: it's possible that the internal knowledge of grammar in each speaker's mind is discrete, but speakers differ with each other in subtle ways, so a frequency statistics in the population shows gradient effects.

We therefore avoid using the term *gradience* without further specification. We say things like "multiple analyses are possible", or "speakers differ in their acceptance of the example" instead when necessary.

1.3 Previous studies

[6]Readers with knowledge on condensed matter physics may compare Ising model with Heisenberg model to see what's going on here: continuous output can arise simply because of continuous weights assigned to each possible configuration of a system, and not continuously deformable configurations of a system.

Chapter 2

Phonology and the writing system

2.1 Vowels

2.2 Tones

2.2.1 Tone sandhi

2.2.1.1 Successive third tone

The most salient sandhi rule is that when two syllables with the third tone appears together, the first's tone is reassigned to the second tone in fluent utterances.

保管好: first and second syllables undergo tone sandhi together

2.2.1.2 Residue in the pronunciation of 一

一个

2.3 Prosody

Phonological words exist in Mandarin and they are mostly defined by the prosody structure. In the rest of this note, the term *prosodic word* and *phonological word* will be used interchangeably, although tone sandhi can penetrate the boundary between prosodic words (§ 2.2.1.1). The prosody structure is about how stress is assigned to phonological constituents. Assigning a prosodic structure is like condensation and clustering: something is merged with something adjacent, and the result is merged with something adjacent else. When two phonological constituents are merged together, one of them is considered heavier than the other. If heaviness is to have a simple relation with the length of a phonological constituent, then usually the more a phonological constituent is, the heavier it is. This is consistent with the condensation picture of prosodic segmentation. Suppose a prosodic constituent attracts a syllable and merges with it. The latter is not an independent phonological constituent and cannot be heavy, so the former is the heavier one and the latter is the lighter one in the larger prosodic constituent.

2.3.1 Prosodic word

The smallest unit of prosody structure is a prosodic word. The simplest prosodic word is the disyllabic foot, which contains two adjacent syllables in the case of Chinese. (It can be made by two moras in other languages.) One is assigned stress and is therefore heavier than the other. Trisyllabic prosodic words also exist in Chinese, though they are highly limited. Most of which are borrowed words (e.g. 加拿大 'Canada') or words formed by coordinating three morphemes (e.g. 数理化 'math, physics, and chemistry'). They can also be regarded as foots (Feng 2000, § 2.2).

2.3.1.1 Prosodic segmentation ignoring morphosyntax

Longer morphosyntactic units are inevitably broke into smaller disyllabic or trisyllabic prosodic words in their prosodic structures, often regardless of their morphosyntactic structure: 加利福尼亚 may be segmented into 加利|福尼亚, although the word contains only one morpheme. In 副总经理, we have two prosodic words, 副总 and 经理, while the morphosyntactic structure of the word is [[副] [总 [经理]]] (§ **??**). This is similar to the case in English and Latin poems, where the prosody arrangement of sentences does not have to respect word boundaries: *arma vi|rumque ca|no*. It's however also possible that a prosodic word has morphosyntactic significance (§ **??**).

Prosody is able to see the constituency structure and prosodic constraints are important in Mandarin grammar. Some prosodic rules pertaining to the constituency tree guide and limit the assignment of relative heaviness and lightness. In Chinese, prosodic segmentation is done strictly left-to-right in each noun phrase (NP), and then the NPs together with verbal constituents are used as the input of prosodic segmentation of clauses. Certain forms are therefore ruled out (§ **??**), not by morphosyntactic reasons but for prosodic reasons.

2.4 Chinese characters

The preferred writing system of Mandarin is the Chinese character system. Except some characters made in early modern ages, like 兙 'kilogram' or 砼 'concrete (lit. human-labor stone)', a Chinese character corresponds to a syllable. However, Chinese characters don't just represent the sound. Putting some quirky cases aside, Chinese characters are often good (but not decisive) indicators of morphemes, (Zhu 2009, p. 1.1.4).

2.4.1 Chinese characters representing roots

The primary focus of Chinese characters is to represent roots. This is handy for Mandarin, as roots are primarily monosyllabic and there are too many homophones. There are, for example, at least seven roots sounding *xiān*, and there happens to be seven Chinese characters corresponding to each of them: 仙, 先, 籼, 掀, 锨, 鲜, and 纤.

Not all roots are represented by unique characters. Certain characters denote more than one root. The character 会 may mean 'conference' or 'be able to do'. In this case, the most likely contexts of the two roots are so different, that confusion is rare, if any.

It is conventional for each syllable of a polysyllabic root to be represented by unique characters, which have no meaning when taken out. The character 萄 as in 葡

萄, for example, means nothing more than the syllable *táo*, but it only appears in the morpheme 葡萄 and 葡萄牙 'Portuguese'. The same is for the character 葡.

2.4.2 Chinese characters representing sounds

There are no characters specially designated to represent sounds only. Sounds are represented by using characters representing roots of similar sounds. The character 登 in 摩登 regularly means 'climb', but in the word 摩登, only its phonetic value *dēng* is preserved, which is used to approximately transcribe the *dern* syllable in *modern*.

2.4.3 Chinese characters representing functional formatives

Grammatical items' Chinese character representation is a special case of § 2.4.2, but is subject to orthographic conventions. The sentence-final particle (SFP) *ba* can be written as 吧 or 罢, the latter hinting its etymology but is now rarely used.

Chapter 3

Grammatical overview

3.1 Morphological typology

A grammar of a language can be summarized into the abstract syntax of clauses (§ 3.2) and noun phrases (NPs) (§ 3.3), how syntactic objects are morphophonologically realized, and the interaction between roots and syntactic environments or in other words parts of speech categorization (§ 3.4). This chapter is a systematic overview of the architecture of Mandarin grammar.

3.1.1 Wordhood

We start our introduction by talking about the morphological realizational part of Mandarin grammar, i.e. morphological typology. A frequent claim is that Mandarin lacks the word/phrase distinction. Syntactically, among world languages, "lexical grammar" and prototypical syntax aren't truly radically different, and this can be seen even in English (Box 3.1), so this claim is trivially true, without providing any new insights. This grammar does not assume existence of a unit called "word" a priori in syntactic constituency relations,[1] and aims to provide a unified analysis of prototypical phrasal syntax and lexical grammar whenever possible (§ 3.2.5.1, § 3.3.4.2).

> **Box 3.1: Shared syntactic properties of words and phrases in English**
>
> Regular syntactic processes happen to both phrases and what are common considered words: a quick google search reveals that *tooth- and back-ache* or *pre- and post-revolutionary France* are both considered acceptable by many. On the other hand, irregularity and fossilization of historical terms can be seen in idiomized phrases as well, as in *till death do us part*.

On the other hand, wordhood can be defined according to various other criteria, like the usual tests for morphological and phonological wordhood and whether these different definitions of wordhood converge into a *global* definition of wordhood is now a non-trivial question.

3.1.1.1 Grammatical wordhood

A morphological word is a sequence of formatives that are put together, making the surface form of an utterance slightly different from what it would be if syntax was

[1] For theoretical discussions, see § 1.2.3 and related sections.

transparently reflected. The verbal complex, described in § 3.2.4.1, for instance, looks like a single morphological word.

A crosslinguistic observation is that the *head* of a major construction – a clause, a noun phrase, an adjectival phrase, etc. – tends to stay as a continuous unit and attracts grammatical markers and sometimes even other content formatives to itself, forming a morphological word. Specifications of the morphological profile and the preference of syntactic environments (e.g. valency) of a form are expected to be tightly knitted together[2] and are both stored in the lexicon or in other words **lexicalized** into **lexemes** (§ 3.4.2, Box 3.2), and thus morphological words can also be known as **grammatical words**. We should note that this type of lexicalization is to be distinguished from another type of lexicalization based on *established meanings*, the latter acting on arbitrarily large units and not just morphological words (§ 3.4.3). On the other hand, lexicalization of morphological form does not always lead to a stable meaning (as is shown by certain Latin verbs which picked up strikingly numerous meanings).

> **Box 3.2: On the term *lexeme***
>
> The fact that lexicalization of morphological form and lexicalization of meaning can be inconsistent makes the exactly meaning of the term *lexeme* unclear here. In English *export*, *import* and *deport*, the inflectional ending and the valency stay the same, and *ex-*, *im-* and *de-* can be regularly analyzed as directional expressions. Thus we may want to argue that from a purely morphological perspective, the three forms share a single (morphological) lexeme *-port*, while *export*, *import* and *deport* are only lexicalized in terms of meanings. We face this problem in Mandarin as well (§ 6.2.1).

Applying grammatical wordhood to Mandarin, we demonstrate that constructions in § 3.2.5, § 3.3.4 form grammatical words, while constructions in § 3.3.2, § 3.3.3 do not, even though they look kind of like compounding intuitively. The correlation between morphological wordhood and valency in the verbal system is demonstrated by e.g. Fig. 3.9. In this example and many others, the lexeme is only a part of the full verb morphological word (i.e. the verbal complex), as Mandarin has aspectual suffixes (§ 3.2.4.1) in a way comparable to inflection in morphologically richer languages (§ 3.1.2). There is no inflection in the nominal system of Mandarin, and grammatical wordhood is to be defined mainly based on the argument structure.

There still exist uncertainties in how these criteria of grammatical wordhood should be applied, mostly for verbs (§ 6.2).

3.1.1.2 Comparison with phonological wordhood

Phonological wordhood can be defined in terms of prosody (§ 2.3.1.1). Prosodic wordhood can often differ from grammatical wordhood (§ 6.1.1, 2a). However, the majority of Mandarin grammatical words are disyllabic, meaning that they are indeed both gramatical and prosodic words. Certain prosodic words are actually phrasal idioms. It seems a large proportion of Mandarin lexicon is made of prosodic words with morphosyntactic significance, regardless of what exactly their morphosyntactic statuses are.

[2]For theoretical discussions, see § 1.2.4. We note that "a verb has no certain conjugated form" and "a verb has no transitive form" are comparable.

3.1.2 Inflection and derivation

The common wisdom that Mandarin lacks morphology is automatically refuted by § 3.1.1 as a grammatical containing multiple pieces *has to* have morphology. Having established that in Mandarin, roots and grammatical formatives are organized in ways comparable to other languages, with well-defined grammatical wordhood, we can continue to classify the observed multi-piece morphological words.

We find that Mandarin lacks prototypical inflectional morphology but still has something that may be analyzed as verbal inflection (§ 3.2.4.1), and it has a decent amount of derivational morphology (§ 3.2.5, § 3.3.4).

The distinction between inflection and derivation is not always easy to draw, especially for verbs, which have a fixed morphological template (§ 6.1.1), making what typically should be considered derivation inflection-like. Our description, based on a unified treatment of lexical grammar and prototypical phrasal syntax, fortunately does not depend on the derivation/inflection distinction.

3.1.3 Morphological devices

The morphology of Mandarin is mostly concatenative. Compounding is the most frequent morphological device, and partly due to influences of European languages, partly due to grammaticalization, affixation is also frequently seen. Plus, reduplication plays an important role in Mandarin verbal and adjectival derivation.

3.2 Clauses

3.2.1 Sentential categories and the nucleus clause

A clause (Box 3.3) can be divided into several clauses linked by **clause linking** constructions, including **coordination** and **subordination**. (Note that coordination can also happen inside the nucleus clause; § 3.2.2.3.) Mandarin has ample information marking phenomena, and thus a clause can be divided into one or more **topics**, if any, and a **comment**, the latter being the **nucleus clause** (§ 3.2.2) plus possible **sentence final particles**.

Box 3.3: Terminology: *clause*, *sentence*, and the like

Huddleston and Pullum (2002) uses the term *sentence* to refer to a natural unit in dialogue, which I refer to as a *utterance*. The term **sentence** here in this grammar refers to a clause that qualifies as an utterance.

Some people, like Deng (2010, p. 140) as well as Dixon (2009), use the term *clause* for subject-predict constructions with no speech force marking. (Deng (2010) uses 句子 as the Mandarin counterpart of *sentence* and 小句 as the counterpart of *clause*.) In this way, sentence-final particles strictly shouldn't be regarded as a part of the clause, and they may be discussed together with other higher level constructions like clause linking. This notion of clause correctly highlights the hierarchy in clausal structures. The problem with this terminology however is that in traditional grammars, the term *clause* does refer to units that have SFPs.

This note therefore refers to all units larger than the subject-predicate construction as clauses, which may or may not be sentence. The subject-predicate construction is instead named the *nucleus* clause. The internal complexity of a clause is still relevant

for example in clause combining.

These high-level devices – topic-comment construction, sentence final particles, and clause linking – can coexist: in (1), diagrammed in Fig. 3.1 topicalization and a sentence final particle appear together. Note that here we assume that the scope of topic is over the scope of the evaluative particle. The relative scopes have subtle semantic effects and Pan (2015) notes that in Mandarin, no preference is made among these subtle semantic differences, meaning that it is also possible that the scope of the sentence final particle being larger than that of the topic. A more telling example with clearly attestable semantic differences is (3).

(1) 张三，他就是个王八蛋而已！

[Zhāng Sān]$_{\text{topic},i}$, [tā$_i$ jiù shì ge wángbādàn]$_{\text{nucleus clause (4)}}$ éryǐ!
NAME 3 just be CLS turtle-egg SFP

'Zhang San is just a son of a bitch, and that's it!'

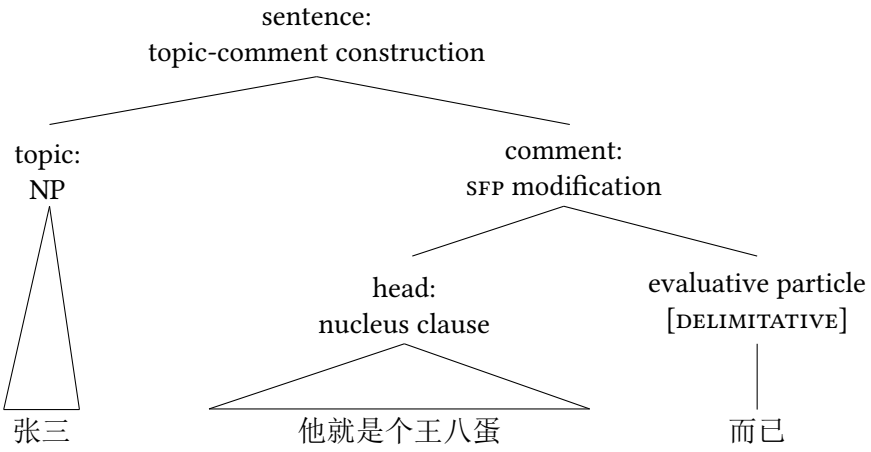

Figure 3.1: Tree diagram of one possible structure of (1)

Similarly, topicalization and clause linking can happen successively as well (2), diagrammed in Fig. 3.2, shows an example of topicalization after subordination. It is also possible to link two topic-comment clauses.

(2) 我幸亏昨天没来，否则就被困住了。

[Wǒ]$_{\text{topic},i}$ [xìngkuī —$_i$ zuótiān méi lái]$_{\text{nucleus clause}}$, [fǒuzé —$_i$
2 fortunately yesterday NEG come or.otherwise
jiǔ bèi kùn zhù le]$_{\text{nucleus clause}}$
then BEI trap V2 ASP

'Fortunately, I didn't come yesterday, or otherwise I would have been trapped.'

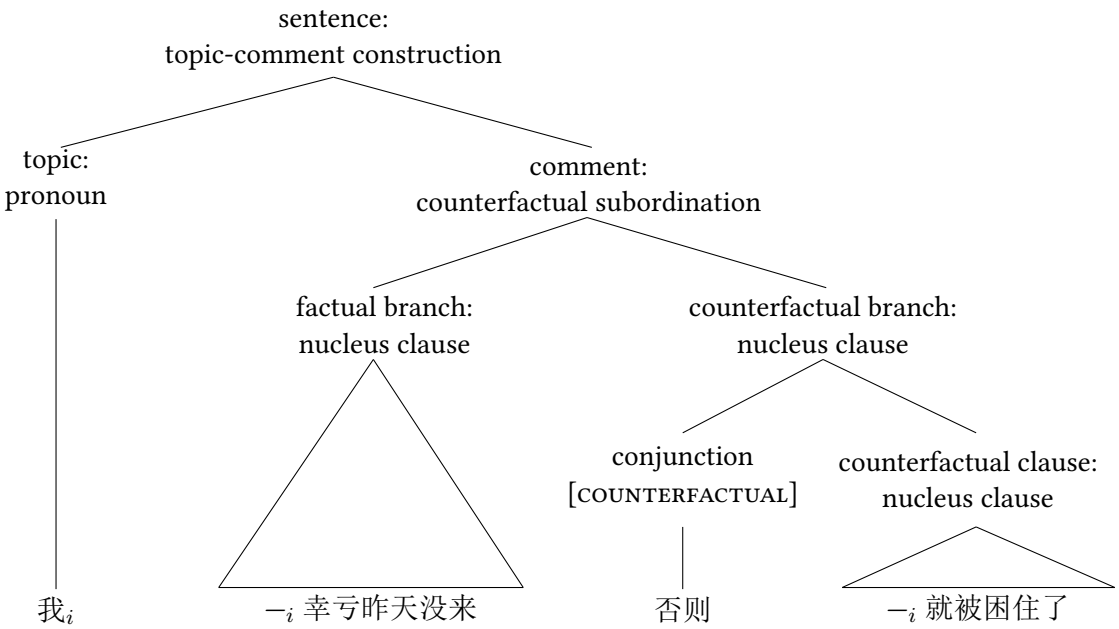

Figure 3.2: Tree diagram of (2)

It is also possible to have multiple sentence final particles. Their relative orders reflect their scopes (§ 10.1). (3) is a modification of (1), in which the particle 吗 marks the interrogative **speech act** (known as speech *force* in some works), which appears to the right of the delimitative particle 而已 and has scope over it. The relative scope of topicalization and the two particles is not specified, and this sentence can be translated as 'Is it the case that as for Zhangsan, he stops at being a son of a bitch?' or 'As for Zhangsan, does he stop at being a son of bitch?' The first translation and the corresponding structure (Fig. 3.3) is more likely to be a genuine question. The second translation and the corresponding structure (Fig. 3.4) is more likely to be a rhetoric question (implied meaning: he's possibly even worse than that).

(3) 张三，他就是个王八蛋而已吗

[Zhāngsān]$_{\text{topic},i}$, [tā$_i$ jiù shì ge wángbādàn]$_{\text{nucleus clause (4)}}$ éryǐ mā?
NAME 3 just be CLS turtle-egg SFP SFP

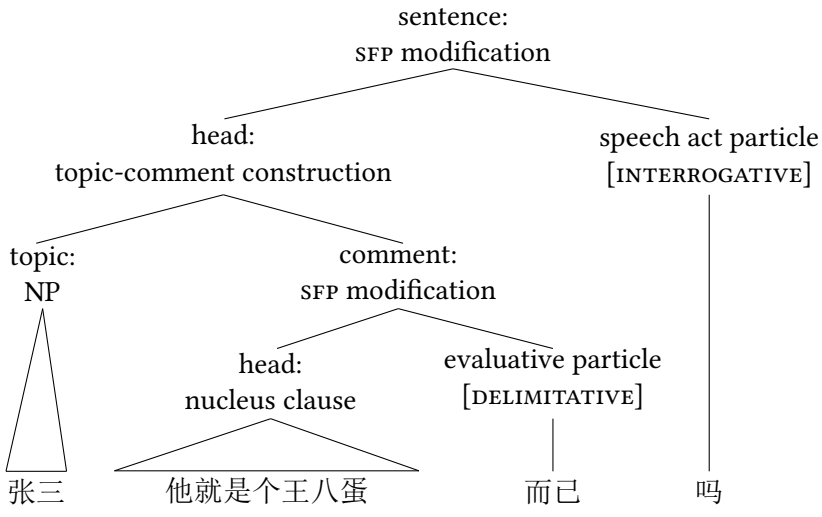

Figure 3.3: Tree diagram of one possible structure of (3)

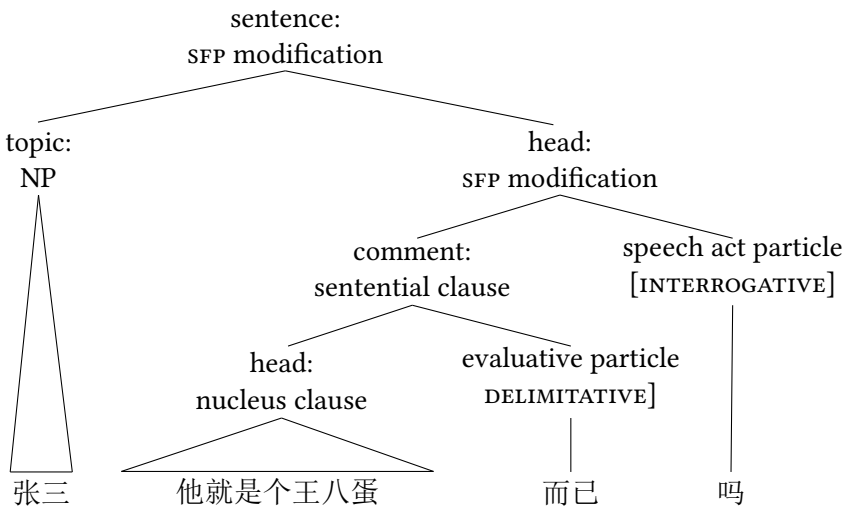

Figure 3.4: Tree diagram of another possible structure of (3)

When the relative scopes of the topic and the sentence final particles are not important, we can also choose the represent the sentence as Fig. 3.5, which is just the diagrammatic version of bracketing in (3).

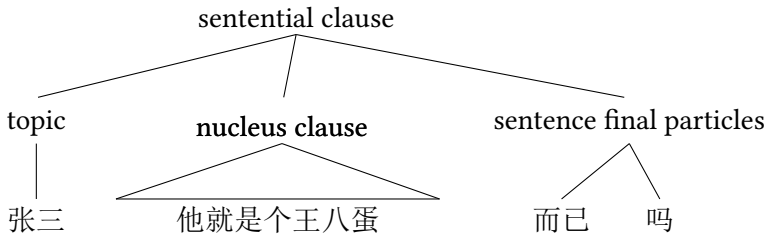

Figure 3.5: A flat-tree representation of (3). Additional information: the topic and sentence final particles have scope over the nucleus clause; their relative scope not specified.

Box 3.4: Embedded clauses

Embedded clauses

3.2.2 Subject and predicate

The **nucleus clause** contains a **subject** (if any) and what is often known as a **predicate** (§ 3.2.3, Box 3.5), which usually is a (extended) **verb phrase**.

(4) 他就是个王八蛋！ $[\text{tā}]_{\text{subject},i}$ jiù shì $[\text{ge wángbādàn}]_{\text{copular complement}}$

Box 3.5: Terminology: *predicate* and *predicator*

Dixon (2009) argues against the definition of *predicate* as the main verb (or adjective) plus somehow "internal" arguments. He uses the term *predicate* to refer to the verbal complex instead. However, since I will need to compare the topic-comment construction with the inner structure of the nucleus clause, the term *predicate* will still be used in the way Dixon (2009) dislikes, because it's the counterpart of the comment role in the topic-comment construction.

On the other hand, in this grammar, the term *predicator* refers to the head of a clause i.e. the thing to which arguments, adjuncts, etc. are attached to in a clause, which typically is just the main verb, although strictly speaking, the main verb, as a morphological word, contains grammatical markers that have scope over the whole argument structure (Fig. 3.9). The term *predicator* is also used in Huddleston and Pullum (2002).

The verb phase contains all the **arguments** in the clause besides the subject (§ 3.2.4.2, Box 3.6), and sometimes particles (§ 3.2.4.6). In the Mandarin simple nucleus clause, the definition of the subject, as opposed to the topic, is not trivially clear. Here we note that the nucleus clause has a neutral structure (§ 3.2.2.1), in which a subject appearing at the initial is both the argument structure pivot (§ 3.2.2.2) and the clause-level pivot.

Box 3.6: Terminology: complement, argument

A construction contains a head and a bunch of other constituents selected by the head. In a clause, the head is the main verb, which selects a subject, one or more objects and probably prepositional phrases, which are collectively called **arguments**. Huddleston and Pullum (2002) also call them **complements**. Note that the term *complement*, in the context of Chinese linguistics, often refers to a slot in the verbal complex described in § 6.1.1, known as 补语 in Mandarin. To avoid confusion, I call 补语 **verbal complements**.

3.2.2.1 Existence of a neutral order

The notion that in Mandarin, subject is the same as topic is prevalent. Taking one step further, one may argue that Mandarin has no argument structure at all and the word order in a clause is shaped by only information structure (LaPolla 2009). This grammar rejects this analysis.

First, we note that a information structure neutral order can be defined for most, if not all, clauses. An example is provided in (5). The two arguments, 饭 and 吃, can be reordered in a seemingly free way depending on their topicality, violating the common generalization that Mandarin has a SVO order. We however note that (5d) is completely unacceptable with the intended meaning. Playing with more possible orders, and we will find that the arguments seem to be only permitted to move *leftwards* (and thus 5d is not possible), consistent with the assumption that a neutral ordered nucleus clause is formed first, followed by topicalization. By analyzing subtle pragmatics differences, we find (5a) seems to be the "neutral" order (although it imposes weak topicality to 你 'you', and 吃饭 'eat (lit. eat meal)' is focalized).

(5) a. 你 吃 饭 了 吗
2 eat meal SFP SFP
'Have you eaten?'

b. 饭 你 吃 了 吗
meal 2 eat SFP SFP
'Have you eaten?'

c. 你 饭 吃 了 吗
2 meal eat SFP SFP
'Have you eaten?'

d. *饭 吃 你 了 吗
meal eat 2 SFP SFP
'Intended meaning: have you eaten? (Actual meaning: has meal eaten you?)'

We also note that there is no dangling topic in Mandarin (§ 9.3). This means *all* topics originate from somewhere within the nucleus clause. On the other hand, the subject, if well-defined by the usual pivot tests, is a part of the nucleus clause, and therefore in Mandarin, topic and subject are different.

3.2.2.2 Subject as pivot of argument structure

Being the initial constituent[3] in clauses like (5a) has a clear relation to being the most prominent or the most *external* argument – the agent or causer or the patient in passive constructions.

In (5a), the initial 你 *has to* be the agent in the clause, who intentionally initiates the action of eating. (6), on the other hand, is the intransitive use of a CAUSE-BECOME verb (and *not* pro-drop and topicalization; § 7.1.1), and by virtue of appearing at the initial of the information structure-neutral clause, 茶 is not the agent: instead, it involuntarily *undergoes* the situation, as the clause has a BECOME structure.

(6) 茶泡好了

3.2.2.3 Subject as pivot of clause

Certain "clause linking" constructions are actually verb phrase linking constructions. At the first glance, (7) looks just like (2), but further grammatical tests show that the two are structurally different. It is not possible for the conjunction 既 to appear before the subject; further, it is not possible for the two branches to have different subjects (8). Therefore, the 既…又… coordination construction (and many more) is for connecting two verb phrases, and we note that that the element shared by the two branches is always the subject defined in § 3.2.2.2:

(7) [我]$_{\text{subject}}$ 既 [不 想 用 这 个 方案]$_{\text{VP}}$，又 [不 想 用 那 个 方案]$_{\text{VP}}$
1 CONJ NEG want use this CLS plan CONJ NEG want use that CLS plan
'I don't want to use this plan, and nor do I want to use that plan.'

(8) a. *既我不想用这个方案，又不想用那个方案
b. *我既不想用这个方案，他又不想用那个方案
c. *我既不想用这个方案，他又不想用那个方案

In particular, we note that in these verb phrase coordination structures, the shared subject corresponds to the sole argument of an intransitive construction and the external argument of a transitive construction (9).

(9) 张三既不打游戏，也不睡

[3]Note that it is possible that certain constituents, like temporal constituents, naturally appear before the subject.

Thus, we find that in Mandarin, we have both well-defined argument structure and clausal pivots, which are identical. This justifies using the term *subject* in describing Mandarin, and confirms that Mandarin is a nominative-accusative language.

3.2.2.4 Omision of subject

When the reference of the subject can be resolved, it can be left blank. In (10), the subject is null, but from the conversational context, it likely referred to the recipient of the question: 'have you eaten?'

(10) 吃了吗

3.2.3 The predicate

(11) is an illustration of a nucleus clause with a complicated predicate. Its constituent structure is shown in Fig. 3.6, following the notation in Huddleston and Pullum (2002). We need to warn that the main information contained in Fig. 3.6 is the *scopes* of constituents surrounding the core verb phrase, while the function labels (e.g. *head*) and the form labels (e.g. *extended VP*) in Fig. 3.6 conflate a series of constructions with subtle differences, as 能在我的办公室跟你讨论一下 and 可能能在我的办公室跟你讨论一下 are both labeled as extended VPs, but clearly they have slightly different syntactic statuses: the auxiliary 可能 can be attached to the former but it can never appear twice and hence cannot be attached to the latter. Giving the two different labels however makes the tree diagram tedious to read, so Fig. 3.6 is a compromise.

(11) 我 [明天 可能 能 在 我 的 办公室 跟 你 [讨论 一下]$_{\text{coreVP}}$]$_{\text{extended VP}}$
1 tomorrow AUX:possible AUX:ability at my POSS office with 2 discuss a.little.bit

'Tomorrow possiblity I can have a discussion with you in my office.'

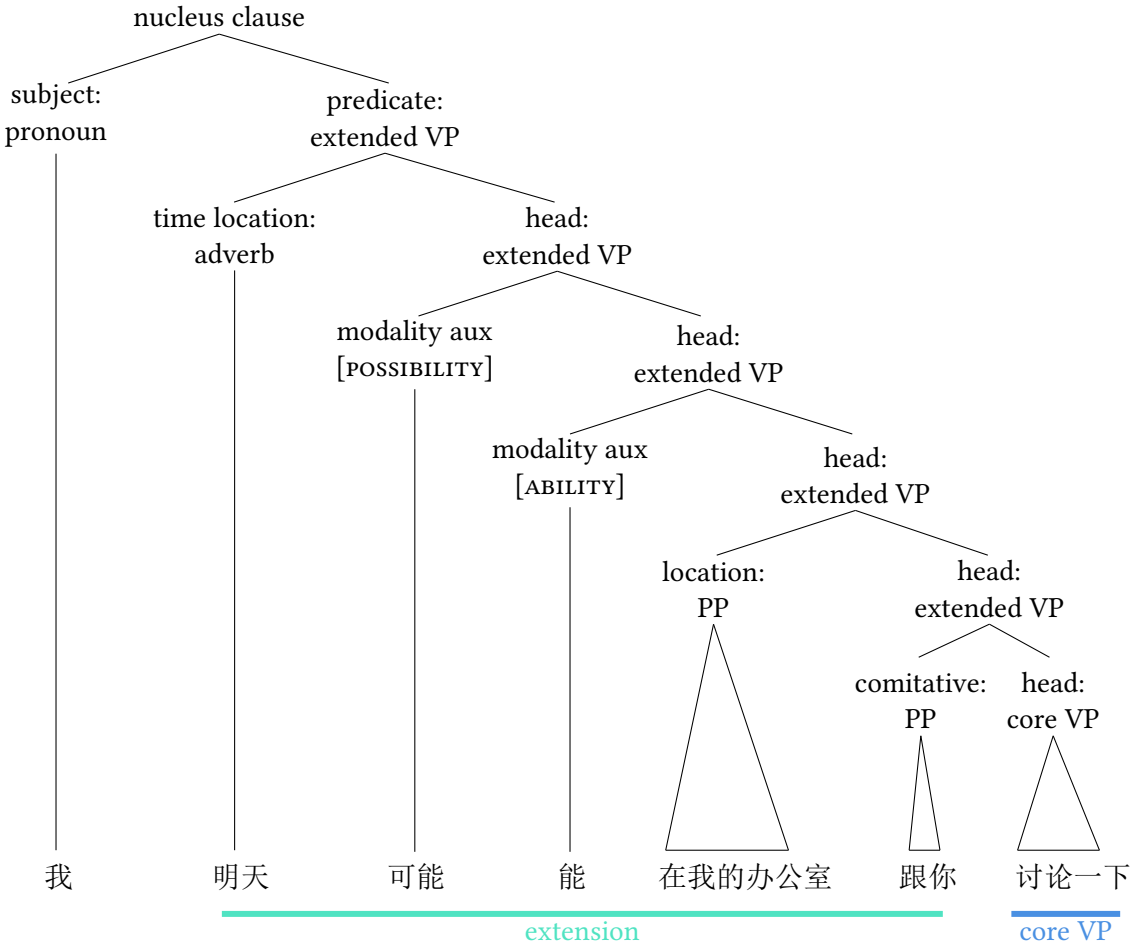

Figure 3.6: Tree diagram of (11)

It can be seen that when we have verbal prediction, the full, extended VP following the subject can be divided into an extension region and the core VP (§ 3.2.4). The extension region contains TAME auxiliaries and adverbs not realized in the verbal complex (§ 3.2.3.1), and peripheral arguments like temporal and spatial locations (§ 3.2.3.3). Sometimes the object may be fronted and it's also possible that a prepositional complement is fronted to this region.

It should be noted that in the disposal and passive constructions, the manner phrase may appear *after* the auxiliary (12), and in this case the boundary of the core VP can't be clearly defined at the surface level, which shouldn't be surprising as we do not expect to always see a clear-cut argument/adjunct distinction.

(12) 我 明天 可能 能 在 我 的 办公室 跟 你 [把]$_{\text{auxiliary}}$
1 tomorrow AUX:possible AUX:ability at my POSS office with 2 BA
这 个 问题 [好好]$_{\text{manner}}$ 讨论 一下
this CLS problem good discuss a.little.bit
'Tomorrow possiblity I can have a good discussion of this problem with you in my office.'

3.2.3.1 Tense, aspect and modality marking

In (11), it can be clearly seen that Mandarin has modal auxiliaries: the order (and also the scope) of 可能 and 能 is strictly 可能 > 能 and never the inverse, suggesting that

these modality markers are grammaticalized items. More analytic markers of TAME categories can be found: it seems 据说 is a peripheristic marker of evidentiality, for instance: in (13), the order of the TAME markers is always 据说 > 可能, and not the inverse, suggesting that 据说 is a part of the TAME grammatical hierarchy.[4]

(13) 这辆车据说可能不太靠谱

[Zhè liàng chē]$_{\text{subject:NP}}$ [jùshuō]$_{\text{evidentiality}}$ [kěnéng]$_{\text{modality}}$ bú tài kàopǔ.
this CLS car is.said AUX NEG very reliable

'It is said that this car may not be very reliable.'

Whether Mandarin has something comparable to tense in more prototypical tensed languages is not clear. An observation is that Mandarin speakers often do not fully subconsciously acquire the tense category when learning tensed languages like English. This, however, does not fully exclude the possibility of an impoverished tense system. On the other hand, based on the positional distribution of certain time adverbs and interpretive evidence, we can actually argue for the existence of a tense category, which gets its value by agreement with the tense-like time adverb (§ 8.1).

Mandarin has ample devices to mark point-of-view aspect. This is primarily done by the verbal complex (e.g. 17), via the (semi-)inflectional marking of aspect by 了, 着 and 过 in the verbal complex (§ 3.2.4), but analytic devices exist. In (14), we find that the aspect marker 在 is separated from the core VP by a manner phrase, proving that 在 is not morphologically merged to the verbal complex. The sentence is diagrammed in Fig. 3.7; cf. Fig. 3.8.

(14) 他在很认真地写作业

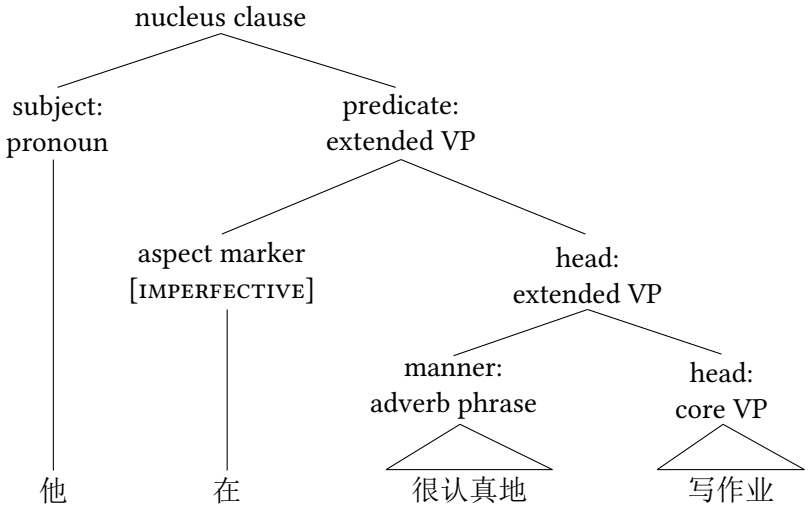

Figure 3.7: Tree diagram of (14)

3.2.3.2 Negation

The negator can appear at any position in the auxiliary chain described in § 3.2.3.1. Its linear order is consistent with its scope, which in turn introduces subtle semantic differences (15).

[4]Note that English adverbs like *allegedly* follow the same generalization: we have e.g. *he allegedly possibly did this* but never *he possibly allegedly did this*. See Cinque (1999).

(15) a. [他]$_{\text{subject}}$ 不 [可能 能 出 国]$_{\text{negated}}$
3 NEG AUX AUX go.outside.of country
'It's not possible that he has the ability to go abroad.'

b. [他]$_{\text{subject}}$ 可能 不 [能 出 国]$_{\text{negated}}$
3 AUX NEG AUX go.outside.of country
'It's possible that he doesn't have the ability to go abroad.'

c. [他]$_{\text{subject}}$ 可能 能 不 [出 国]$_{\text{negated}}$
3 AUX AUX NEG go.outside.of country
'It's possible that he has the ability to not go abroad.'

(15) shows a negation device that is more flexible in its scope that the English negation. (15b) can be word-to-word translated to English as *he possibly cannot go abroad*, but (15a) and (15c) can only be faithfully translated using complement clause constructions.

3.2.3.3 Peripheral arguments

The term *peripheral argument* is from Dixon (2009). We intentionally use the term here instead of the more frequent *adjunct*, because there are both TAME adjuncts and circumstantial adjuncts, the latter known as peripheral arguments in Dixon (2009).

A clear distinction between core and peripheral arguments, more often known as the argument/adjunct distinction, is not always possible. Some criteria used for the distinction are about structural closeness of the argument to the main verb, or in other words scope: the manner expression usually has a scope wider than the core verb phrase, and thus the former is classified as a peripheral argument. Other criteria are based on licensing: intransitive use of a transitive verb is prohibited by the lexicon, or, in more technical terms, the verb root appearing in a verbal environment but without transitivity is not allowed by the lexicon (Siddiqi 2009). Thus *well* in *he treats us well* seems to be an argument, although it's a manner expression. Yet other criteria are based on argument indexation and flagging: an argument with oblique case marking does not leave agreement markers on the main verb, while an argument with structural case (nominative, accusative) does if the language has agreement marking, and the latter is recognized as a core argument. Following this standard, many so-called oblique arguments, like *this* in *I think [of this]*, would be classified as peripheral, although they are clearly licensed by the lexical entry of the verb. These criteria correlate with each other but in a non-deterministic way.

Because Mandarin has no verb agreement, only the first two criteria can be used, and the problems listed above all occur. The status of comitative 跟你 in (11) is not so clear, for instance: it is fairly low in Fig. 3.6, but it is not obligatory. We also note that reordering of peripheral arguments is possible, but mixing them with TAME markers sounds problematic to say the least (16). Note that fronting of the comitative to a higher position is possible (§ 9.2).

(16) a. 我明天可能能在我的办公室跟你讨论一下 (=11)
b. 我明天可能能跟你在我的办公室讨论一下
c. ??我明天可能跟你能在我的办公室讨论一下

3.2.4 The structure of the core verb phrase

In the surface form, the core VP contains the core arguments and the **verb** (§ 3.2.4.1). The bracketed constituent in (17) is a typical core verb phrase.

(17) 我 [[做 完 了]$_{\text{verb}}$ 作业]$_{\text{core VP}}$
1 do finish ASP homework
'I have finished the homework.'

Mandarin has two types of constructions in which the main verb appears at the final: the DISPOSAL construction, and the so-called PASSIVE construction, also known as the *ba*-construction and the *bei*-construction.

(18) 我把作业做完了

3.2.4.1 The verbal complex

Due to a lack of better terms, the term **verb** has to have multiple meanings (Box 3.7). Here it refers to what uncontroversially is a morphological word, which may receive a clearer name **verbal complex** especially when having a complicated internal structure, as is discussed in this section.

> **Box 3.7: The term *verb***
>
> We have just defined a *verb* as (a) the central morphological word of a clause. On the other hand, the term *verb* may refer to (b) anything that appears in the position of the predicator and has an argument structure that needs to be specified by lexical information. This is to say its internal structure, if any, by definition is formed by *compounding* (Box 3.8). The two definitions differ in that certain formatives in (a) (commonly referred as inflection and very regular derivation) can be regularly attached to the morphological word and need not be stored in the lexicon and thus are out of (b).
>
> What is commonly referred to as a *verb* can also be (c) any form that appears at the center of a clause and is lexicalized (§ 3.4). Idioms sometimes are whole VPs (§ 3.4.3), so some parts of a verb in the sense (c) are not included in a verb in the sense (a). It is also possible to coin ad hoc verbs without semantic lexicalization, although this is much less frequent.
>
> We use terms *verbal complex* for (a), *lexeme* for (b) (Box 3.8), and *verbal lexical entry* i.e. *lexeme* for (c) to specify what we mean more clearly whenever such confusion arises.
>
> All the issues have counterparts in English grammar, but due to the less productive internal structures of English verbs, and the more regular lexeme-plus-conjugation, main verb-plus-auxiliary structure of the verbal complex, these issues can often be overlooked.

The boundary of the verbal complex, i.e. the morphological word that contains the predicator is sometimes hard to say, because some suffixes actually look like clitics in certain circumstances (e.g. § 6.1.1.1), and in other cases we have incorporation (e.g. § 6.1.2). We note that disagreement on wordhood does not influence the description of at least syntax (§ 3.2.5).

Several types of verbal complexes exist in Mandarin (§ 6.1). In (17), 完 is the verbal complement, and 了 is the aspect marker (§ 6.1.1). We note that the scope of the aspect marker 了 is *over* the core verb phrase as it governs the whole nucleus clause. Following Fig. 3.7, we can represent the structure of (17) in Fig. 3.8.

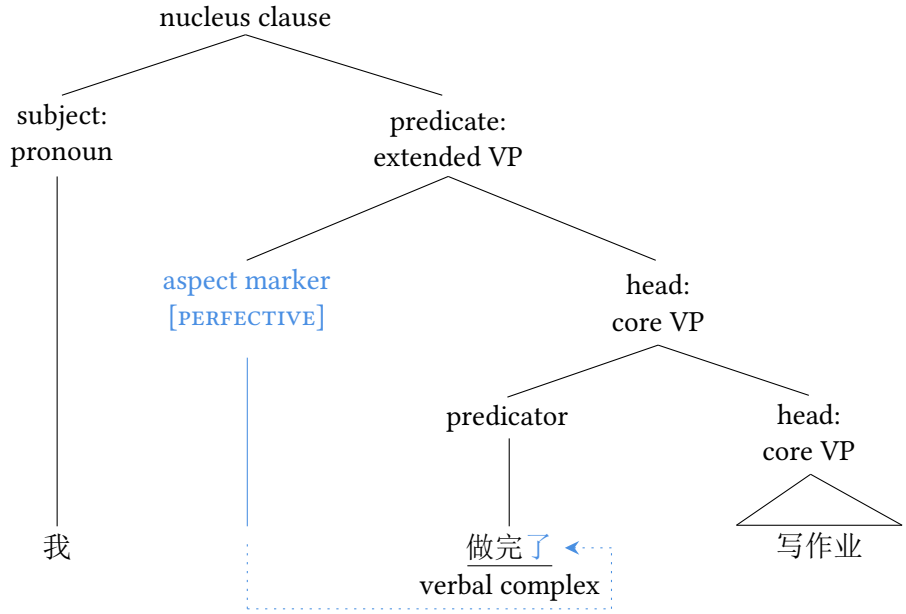

Figure 3.8: One tree diagram representation of (17)

Actually, it is likely that 完 here is a lexical aspect marker, and likely has scope over the whole 做完作业 argument structure, so we need to add one more node between the aspect marker node and the predicator node in Fig. 3.8. The possible types of formatives in the verbal complex and their structural origins are described in § 6.1.

Aspect marking and compounding can coexist. In 19, the main verb consists of a dephrasal compound (Fig. 3.10), and the aspect affixation in Fig. 3.8 also exists. Fig. 3.9 is a diagrammatic representation of the verb structure in (19).

(19) 上任第一天关心了这件事

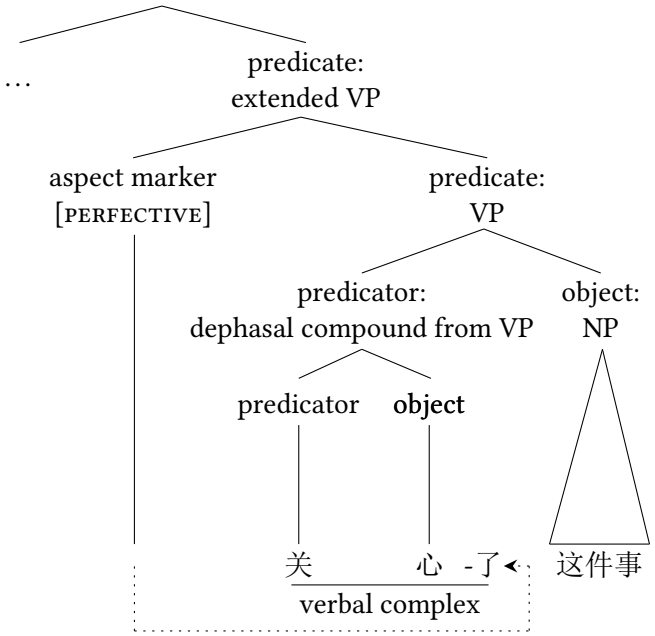

Figure 3.9: Tree diagram representation of (19)

A verb is sometimes *separable*, meaning that other constituents within the verb phrase can be incorporated into it. In (20), for instance, the object is incorporated into the verbal complex. The incorporated constituent is not limited to the direct object. The linear order of the clause after verb splitting does not always transparently reflect the constituency relations in the clause (e.g. 41).

(20) a. 这件事你关什么心啊
b. 这件事你关心什么啊

Below, when we explicitly refer to *the verb*, often it is related to the morphological word i.e. the verbal complex and the relevant morphological realizational properties.

3.2.4.2 Intransitive and monotransitive constructions

Verb frames in Mandarin can be divided into the DO class (about actions), the BECOME class (about changes of states), the CAUSE-BECOME class (about something causing a state to change), and the purely stative BE class.

Just like the case in English, DO verb frames often allow S/A-ambivalence, where the P argument of a transitive verb frame (i.e. the more internal, patient-like argument) can be removed, leaving only the subject (21).

(21) a. 他喜欢玩
b. 他喜欢玩玩具

On the other hand, we observe regular alternations between BECOME and CAUSE-BECOME verbs, and hence S/P-ambivalence (22). It should be noted that not all BECOME verbs can receive a CAUSE-BECOME verb frame (23). We also note that the alternation in (22) cannot be explained by topicalization (§ 7.1.1).

(22) a. 茶泡好了
b. 我泡好茶了

(23) a. 这只猫死了
b. *坏人死了这只猫

A rather interesting phenomenon in Mandarin is the EXPERIENCE-BECOME construction, in which the subject *experiences* the effect of a change-of-state situation (24).

(24) a. 王冕死了父亲

The verb frames naturally have correlations with the lexical aspect of the clause: change-of-state clauses are naturally telic and often cannot be in the progressive aspect (25). But counterexamples exist (26).

(25) *这只猫正在死

(26) 我正在泡茶

3.2.4.3 So-called semi-objects

The A and P arguments discussed above are not the only types of arguments in Mandarin clauses. The semi-objects (准宾语 in Chinese grammatical tradition; Zhu 2009, p. 132) is introduced in this section; the others are introduced in the following sections.

The duration of a Mandarin DO clause can be measured by a so-called **semi-object** (27). This is related to the so-called pseudo-attributive construction, where the semi-object becomes the determiner of the nominalized core VP (28; § 3.2.4.7). Note that the semi-object construction is more permissive than the pseudo-attributive construction, the latter only allowing the object to be a bare noun (50).

(27) 我工作了一年

(28) 干了一个月的活

3.2.4.4 Internal arguments

Some verb frames have what we may call **internal objects**, usually licensed by a verbal complement. These arguments are immune to any further syntactic operations. The simplest case is the preposition complement construction (29). The CAUSE-BECOME-internal object structure is also possible, although due to various constraints, sometimes it can only be realized as a DISPOSAL construction in the surface form (30).

(29) 我住在上海

(30) a. 卡车装满了稻草

b. 他把卡车装满了稻草

3.2.4.5 External possession

External possession is not commonly mentioned in Chinese grammar tradition, but nevertheless is attested in the argument structure of Mandarin.

(31) 这些橘子已经剥了皮了

(32) a. *这些橘子已经剥了它们的皮了

b. *这些橘子已经剥了很难剥的皮了

Finally, there seems to be a DO-AFFECT-PATIENT construction (33). This construction is tentatively classified as a subtype of DO verb frames, mainly because we have no semantic evidence for a CAUSE-TO-LOSE analysis, especially in (34), where it's hard to argue that 他 and 耳光 form a mini verb frame meaning that the person in question loses something (Huang 2007). This however raises the question whether some semi-objects are to be analyzed in the same way, and not as a wide-scope quantity or frequency phrase: cf. 打了他一下.

(33) 阿飞抢了我一顶帽子

(34) 打了他一个耳光

3.2.4.6 Verb-particle constructions and secondary predications

Just like English, Mandarin has directional and resultative particles in the argument structure.

(35) 张三拿了三瓶酒过来

(36) 张三拿过来了三瓶酒

The presence of certain verbal complements alternates the argument structure. 买 is transitive, but (37) demonstrates that the presence of the complement 贵 makes a transitive clause structure unacceptable. This suggests that the underlying structure of (37a) differs from typical verb-particle constructions: it is possible that 买 here is actually a manner expression, and 贵 is the real main predicator.

(37) a. 这辆车买贵了
b. *我买贵了这辆车

3.2.4.7 Pseudo-attributive constructions

In the pseudo-attributive construction, a constituent usually appearing as a determiner of a noun phrase, like a numeral (38) or a possessive (39), is inserted into a verb phrase. This constituent is often known as a pseudo-attributive.

(38) 我们干了一年的活

(39) 你当你的老师

Huang (2008) suggests that the pseudo-attributive is indeed an attributive: what likely happens here is that the core VP undergoes some sort of nominalization, and the whole clause thus has a structure similar to 我们 DO [[一年]$_{\text{quantity}}$的干活]$_{\text{nominalized core VP}}$ (cf. English *we've being doing this work for one year*). Then, because of the morpho-phonological requirement in Mandarin, the verb 干 is fronted, forming (38). When the main verb is disyllabic, it is sometimes possible to only front the first syllable (40).

(40) 你保你的守

An empirical observation is that the pseudo-attributive construction is generally incompatible with full-fledged complex NP objects (50). A parallel observation is that so-called glued-up predicator-object forms – which, again, contain only bare noun objects – can appear in nominal complementation without any modification (49). In both constructions, we find verb-bare noun object combinations undergoing what seems to be nominalization, which is not possible when the object is a full fledged NP. The nominalization analysis of the pseudo-attributive construction in Huang (2008) is hence corroborated by this observation.

We also have the ditransitive pseudo-attributive construction, in which the nominalized core VP has a recipient. (41) is an example. Note that splitting of the verb (as in 40) also appears in this example.

(41) 幽了他一默 'give him humor'

3.2.4.8 Verb copying construction

(42) 做工做了一星期

3.2.5 Derivation

We have now reached the center of the clause structure, and start to deal with concepts that typically fall under the category of derivation. The exact meaning of the term *derivation* of course involves the question of wordhood. In this grammar, we maintain that there is no need to treat the grammar above and below the line of wordhood in drastically different ways a priori: we explore "syntax within the word" in this section, and then move on to discuss purely morphological operations that gather formatives together to form morphological words in chap. 6. Fig. 3.8 is a good illustration of our approach. Whether a definition of wordhood naturally emerge is discussed later in § 3.1.1, § 6.2.

3.2.5.1 Compounding

Frequently, the verb has an analyzable internal structure. Sometimes that structure has no connection to any regular verbal constructions at all. In (43), 矛盾, if taking literally as a noun-level coordination, means 'spear and shield', but is used as a verb. That it is used as a verb cannot be explained by any regular syntactic construction: what happens here is probably that 矛 and 盾 form a symmetric coordination, which, due to idiomization (in this case, the irresistible force paradox), appears in a verbal syntactic context.

(43) 他感到很矛盾

In other cases, the internal structure of the verb *is* analyzable within modern Mandarin syntax, but the argument structure of the main verb still can't be regularly predicted from the internal structure. An example is given in (44).

(44) 张三的女朋友很关心他

In this example, we note that 关心 has an internal predicator-object structure. The sequence 关心他 can't be explained by any attested verb frames in Mandarin (chap. 7), and therefore 关心 can only be seen as a **dephrasal compound** (on the meaning of the term *compound* see Box 3.8) originating from a verb phrase (possibly a glued-up verb phrase; § 3.2.5.3), which then "wears" a transitive verb frame around it and functions like a verb (the blue part in Fig. 3.10). On the other hand, forms in § 3.2.5.3 do *not* wear new valency frames around them, and are not compounds in the proper sense (Box 3.8).

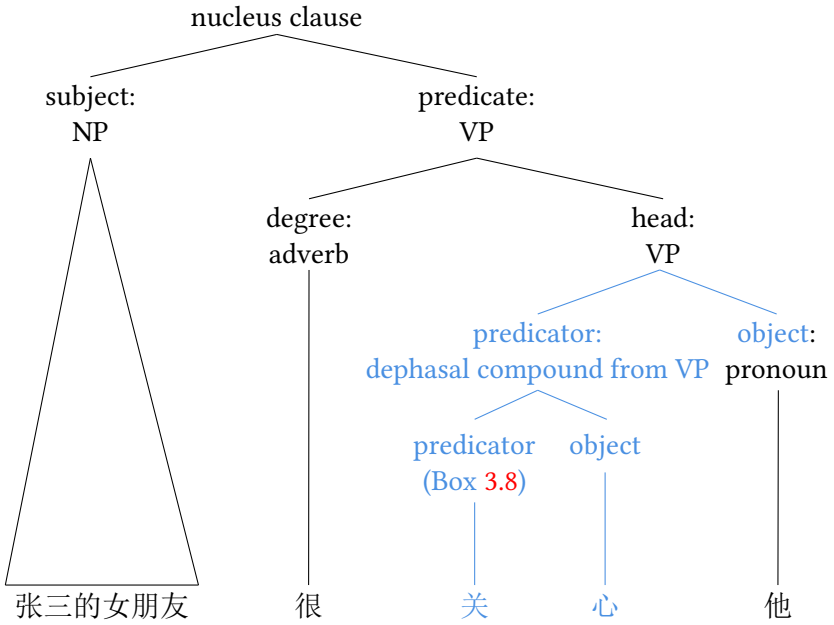

Figure 3.10: Tree diagram analysis of (44). The blue part refers to the verb frame of 关心.

Box 3.8: Terminology: *dephrasal* and *compound*

The terms *dephrasal* and *compound* here are used just out of convenience, without implying that syntax stops at the boundary between prototypical phrases and compounds: what is traditionally recognized as a compound may show quite "phrasal" behaviors (§ 3.3.3). Some syntactic tests are given in Huddleston and Pullum (2002, pp. 448-451), but even at the level of compounds defined by Huddleston and Pullum, some regular syntactic processes happen (Box 3.1). In this section and in the rest of this grammar, we just *define* what happens *before* the verb frame being introduced **compounding**. This does not deny that syntactic processes apply to this definition of compounds too, and indeed (45) can be seen as an instance.

A compound with an internal structure that resembles a phrase is known as a **dephrasal compound**. Whether actually the internal syntax of a dephrasal compound is the same as prototypical phrasal syntax is another question. It could just be RECATEGORIZATION, i.e. a verb phrase as a whole wears a verb frame outside of it, or it could involve **syntactic erosion** and has an internal structure that is unlike structures commonly referred to as phrasal. We can use English as an example: *sickbed* can be regularly interpreted as 'bed related to sickness', i.e. the bed on which one lies sick. The form *sick-*, meaning *sickness* here, clearly is not be used as an adjectival phrase, and is likely just an uncategorized root, being glued to another root *bed* in some sort of "aboutness" construction. In other forms, however, the distinction is not always easy to make, which precisely is the reason that diachronic evolution from the first type to the second type can happen.

The distinction between the two types of compounding is observed both in the nominal and the verbal systems. What is described in § 3.3.4.2 is clearly the second type, or "real" compounds, and so is the verb in 46. We may want to use this distinction to demarcate the boundary between words and phrases, but note that cross-linguistically, it is also possible to embed a form that is commonly considered a phrase into a not-so-prototypical construction. This is common in English informal speech, like *[killing 682]-ology* from this forum discussion. As usual, syntactic criteria hardly provide clear

demarcation of wordhood (Box 3.1), and "real" compounds (i.e. the second type) can be analyzed using concepts from prototypical phrasal syntax as well (Scher and Nobrega 2014).

The distinction between the two types of compounding, which determines whether certain marginal forms are acceptable, is also related to whether we should label 关 in Fig. 3.10 as a predicator (which only makes sense when we have a "real" verb phrase structure). Our labeling here is tentative.

Labeling of constituents of compounds becomes problematic when we are dealing with cases like *hard worker*, which is better represented as *[work hard]-er*, and *work* and the nominalizer *-er* form a morphological word which does *not* have the lexicalized meaning of the word *worker* 'employees, especially factory workers etc.': in this case *worker* is a morphological word and its internal parts do not form a grammatical constituency, so any This is even more clearly revealed by the form *do-gooder*. No such forms exist in Mandarin, which justifies our usage of tree diagrams, which is only handy when a relatively transparent mapping between syntax and morphological realization exists in the language in question.

Finally, constructions in § 3.3.3 and § 3.2.5.3 are often referred to as compounding in some teaching materials, but they are structurally different from both types of compounds defined above, and are better analyzed as 粘合式结构 or *glued-up structures*, in terms of Zhu (2009) (cf. § 3.2.5.3).

More types of compounding constructions exists besides dephrasal compounding. The structure of some so-called compound verbs reminds us of verb phrase-level coordination (§ 3.2.2.3). The two branches in (45), 吃 and 喝, for instance, can both take 东西 as their objects. Whether (45) is to be analyzed synchronically as the coordination of 吃 and 喝 sharing the same object is not clear.

(45) 哪怕没有吃喝东西

Some verbs however are clearly not formed by synchronic verb phrase-level coordination: in (46), the two roots 讥 and 讽 are both Classical and never appears as heads of clauses on their own. This however does not mean the roots are not productive: from 讽 we have 反讽, 讽诵, 讽经, and more. (46) therefore uncontroversially involves "real" compounding, different from the synchronically still analyzable (45). Accompanied by this distinction is a constraint in complexity: coordination at the VP-level can be quite complicated, while real compounds involving roots like 讽 typically cannot be very long.

(46) 不要随便讥讽人

3.2.5.2 Affixation

Affixation is not very productive in Mandarin's verbal system. Verbalization suffixation exists (§ 6.1.1), and certain

(47)

3.2.5.3 Glued-up predicator-object structures

A type of predicator-object forms that at the first glance resembles Fig. 3.10 is what Zhu (2009, pp. 128-9) calls **glued-up predicator-object structures** (粘合式述宾结

构). In a glued-up predicator-object form, the object being a bare noun, without any modification or complementation: see e.g. 营救人质 in (48).

(48) 这个工作组要去[营救人质]$_{\text{glued-up}}$，去[营救困在石油园区里的倒霉鬼]$_{\text{VP}}$

At the first glance, there is nothing special with the object being a bare noun, because if 营救 takes an object, then 营救人质, in which the WH-pronoun, the numeral and the classifier are all removed from the object is of course also well-formed. There are however properties of glued-up predicator-object forms that are not shared by prototypical verb phrases which can take arbitrarily complicated objects. The contrast between (49a) and (49b) means that 营救人质 (a glued-up predicator-object structure) can be used as a nominal in § 3.3.3 while 营救他们, which is a prototypical verb phrase, or in the terminology of Zhu (2009, pp. 128-9), a **compositional predicator-object structure** (组合式述宾结构), can't (cf. 63, a similar contrast).

(49) a. [营救人质]小队
b. *[营救他们]小队

We tentatively analyze these glued-up predicator-object forms as verbs taking bare nouns which do not have clear references (instead of full fledged ones) as objects (Box 3.9). First, we note that a glued-up predicator-object form regularly takes no other object.

A second piece of evidence comes from the pseudo-attributive construction (§ 3.2.4.7). We note that the pseudo-attributive can only appear when the object is a bare noun (50a): it cannot appear when the object is a full fledge NP (50b). This contrast demonstrates existence of structural difference between a bare noun object and a full fledge NP object. (50c), on the other hand, is a semi-object construction, and does not impose any requirements to the complexity of the object. As the distinction between the two types of objects has been motivated independently by the pseudo-attributive construction, it seems optimal to also attribute the peculiarity of glued-up predicator-object forms to this distinction (see also § 3.2.4.7).

(50) a. 他看了一天的书
b. *他看了一天的那本书
c. 他看了一天书/那本书

> **Box 3.9: Alternative analysis**
>
> We are tempted to adopt a dual-structure analysis: one has undergone syntactic fossilization and become a dephrasal compound (as in e.g. 49a), and the other is regularly built by phrasal structural rules of the verb phrase. This, however, inevitably involves the problem of definition of "compounding": in § 3.3.3, for instance, the nominals, despite looking like compounds, can be analyzed as formed by prototypical argument structures.

A glued-up predicator-object form often – but not necessarily – is disyllabic, in which the verb has one syllable and the object has one syllable, without any other constituents. This however is not absolute, as is shown by the intentionally chosen example (48).

3.2.5.4 Bound objects

Another type of unusual grammatical units that look like VPs license objects that do not typically appear as heads of NPs (51a vs. 51b). Zhu (2009, p. 129) argues that based on the fact that as the objects are "bound morphemes", these units can only be compounds. This assumes homogeneity of "bound morphemes" (§ 3.4.1) and a strict word/phrase distinction based on the morpheme-word-phrase hierarchy, which we do not stipulate a priori. In the case of (51), we note that the object 亏 can be modified by 这个, and can be topicalized (51c). This is clearly not the behavior of a typical compound verb. Instead of invoking the word/phrase distinction, we tentatively assume that the appearance of 亏, for some reasons, can only be licensed by the presence of a handful of other grammatical objects, 吃 included, and once it is licensed in a clause, its behavior is the same as a typical noun. This explains unacceptability of (51b) and acceptability of (51c).

(51) a. 我昨天[吃亏]了
b. *一个亏
c. 这个亏我不能吃

Under our analysis, 吃亏 and the like are all verb phrases, not necessarily dephrasal compounds. We therefore reject the analysis of Zhu (2009, p. 129).

3.3 Noun phrase

3.3.1 The determiner region

Following the procedure in § 3.2.1, we start analyzing the noun phrase by recognizing the high-level categories first, which mean what are commonly called **determiners**. Following the convention in Huddleston and Pullum (2002), we name the part of the NP below the determiner region the **nominal** (Box 3.10). A nominal can form a NP on its own (e.g. 57).

> **Box 3.10: Terminology: *nominal***
>
> The term *nominal* refers to different things in different places. In Indo-European comparative linguistics, a *nominal* is a word that has a noun-like pattern. This is not hwo we use the term *nominal* here.
>
> Besides, sometimes we have to use *nominal* as an adjective in this grammar to refer to anything that is related to the noun phrase. This causes confusion, but we have no better terms.

(52) is a demonstration of the determiner region of the NP in Mandarin. A hierarchy, possessor > demonstrative > numeral > classifier, can be identified. Alternating the linear order in this hierarchy renders the whole NP completely unacceptable, except maybe (53).

(52) 我的 这 二十 件 [大 白 褂子]$_{\text{nominal}}$
1-POSS this twenty CLS big white robe-DEMINUTIVE
'these twenty big white robes of mine'

(53) ?这 二十 件 我的 [大 白 褂子]$_{\text{nominal}}$
this twenty CLS 1-POSS big white robe-DEMINUTIVE
'these twenty big white robes of mine'

Mandarin has both prepositions and postpositions. The syntactic positions of both are higher than the determiners, as shown by the linear order (54, 55): the noun phrase proper is surrounded by the pre- and post-positions.

(54) 在这二十个人里

(55) 从一张缺了一条腿的桌子上面

A general tendency is that the scope of the preposition goes over the scope of the postposition: the contrast in (56) clearly demonstrates that 上 is merged with 桌子 first, and then is combined with 从. This follows the general crosslinguistic observation that when it comes to relative scopes of multiple adpositions, path > place (cf. English *from behind the door*), and prepositions in Mandarin are mostly about path. The opposite hierarchical relation does exist (§ 5.2).

(56) a. *从桌子
b. 桌子上
c. 从桌子上

3.3.2 Adjectives

Although the noun phrase in (57) looks quite compact, we note that it has structurally nothing different from the English *a big white robe*. In particular, the order size > color and the relevant scope effects is shared by (57) and *a big white robe*.

(57) 大白褂子

The structure of (57) therefore is represented in Fig. 3.11. We note that here the label *nominal* is used in a slightly sloppy way, just like how the label *extended VP* is used in Fig. 3.6: if we have the hierarchy size > color, then by definition the syntactic properties of a color modification construction is not the same as the syntactic properties of a size modification construction. Giving 白褂子 a label *NP with color modification* however makes the tree diagram tedious to read and Fig. 3.11 is a compromise.

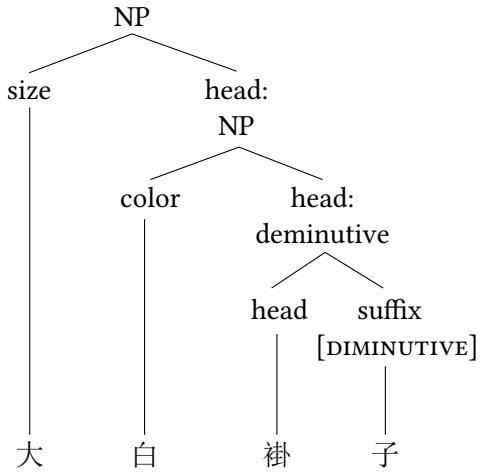

Figure 3.11: Tree diagram of (57). What is to be recognized as the noun is discussed in Box 3.11.

Box 3.11: The term *noun*

Similar to the case of the verb (Box 3.7), the exact meaning of *a noun* is also ambiguous. Unlike the case of the verb, however, in Mandarin, the morphological noun word contains no inflectional formative, so we have two definitions of the term *noun*, one comparable to definition (b) in Box 3.7, one comparable to definition (c). Note that definition (b) involves determining what counts as the argument structure; in the nominal system, this is not trivial and is discussed by contrasting § 3.3.3 and § 3.3.4.2. When no § 3.3.3-type complementation exists, a general rule is that what can appear as the possessee in a possession construction is a noun under the definition (b). The main inconsistency between (b) and (c), as is discussed in Box 3.7, is that certain idioms fall under (c) but not (b). See § 3.4.3.

In this particular case, if we swap 大 and 白, the result is acceptable (58; whether the diminutive suffix 子 can be kept has regional variances, as the suffix tends to be dropped by speakers outside northern China), but means something completely different: 白大褂 has a fixed, non-compositional meaning 'lab coat'. The irregularity of the structure of (58) and its fixed meaning suggests that (58) has undergone syntactic fossilization and is now a dephrasal compound (Box 3.8), while (57) is a NP.

(58) 白大褂

The historical origin of 白大褂 likely is syntactic fossilization of the regular adjective modification phrase [[白]$_{\text{color adj}}$ [大褂]$_{\text{NP}}$]$_{\text{NP}}$, in which 大褂 in turn is a dephrasal compound. The structure of (58) therefore can be represented as Fig. 3.12.

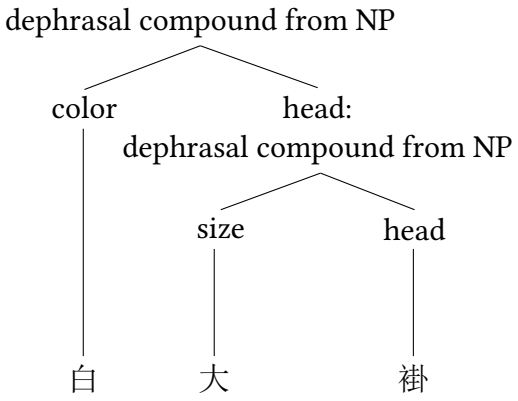

Figure 3.12: Tree diagram of (58)

3.3.3 Argument structure

In many works, forms like (59) are often called compounds: the three branches, 研究生, 招生 and 工作 are simply put together, and the meaning is transparent. There is no structure-based universally accepted definition of the term *compound*, so it is impossible to know if the term is being used correctly in these works. What we do know is that (59) is most comparable to so-called glued-up VPs (§ 3.2.5.3).

First, we have evidence for argument structures. We first note that the pre-head position can be filled by a large number of forms (60). Further, we note that (61a) sounds fine, while (61b) is not acceptable. This means 招生 '(student) recruitment' first selects the patient (i.e. students who are recruited) and then selects the agent (i.e. who recruits students), and this order is reflected by the linear order.

(59) 研究生 招生 工作
research-student recruit-student work
'Graduate student recruitment'

(60) a. 学生招生工作
b. 学员招生工作
c. 本科生招生工作
d. 女飞行学员招生工作

(61) a. 高校 研究生 招生 工作
high-school research-student recruit-student work
'Recruitment of graduate students by higher education institutions'[5]
b. *研究生 高校 招生 工作
research-student high-school recruit-student work
Intended word-by-word translation: 'Recruitment by higher education institutions of graduate students'

We in turn note that 工作 in (59) takes 研究生招生 as its argument. We know this first because 工作 can be replaced by many other forms (62), and the test in (61) applies to all examples in (62) equally. This means licensing of the argument 研究生 is done by 招生 alone, and not by 工作. This analysis also makes sense semantically: 研究生招生 is an action, and 研究生招生工作 further nominalizes it. We therefore has Fig. 3.13.

(62) a. 研究生招生工作
b. 研究生招生任务
c. 研究所招生计划

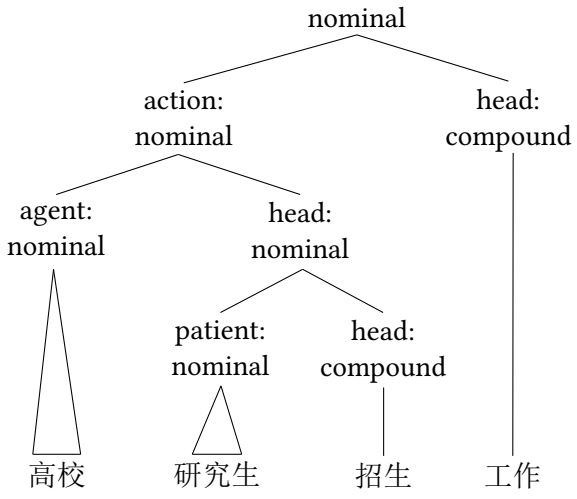

Figure 3.13: Tree diagram of (61a).

What makes (59) intuitively "compound-like" (whatever the term means) is that the argument(s) it selects is expected to be about *classes* of objects and can't be referential.

[5]In Standard Mandarin, 高校 means 'higher school' or 'higher education institutions', i.e. colleges. High schools are translated as 高级中学 'lit. high-grade middle schools', abbreviated as 高中. Not to be confused with 高校 in Japanese, which does mean 'highschools'.

That's to say, (63) is *not* acceptable, because the NP 我那个同学 'that classmate of mine' refers to a certain person, while arguments licensed in (59) can only refer to a certain culturally meaningful set of things or people.

(63) *我那个同学招生工作

Finally, it is possible for arguments to be enriched into full fledged noun phrases. Mandarin does not have counterparts of English post-nominal *his playing [of the national anthem]*, and the full fledged argument can only be promoted to the possessor position, as is illustrated in (64).

(64) 这个学校的研究生招生工作混乱得很

3.3.4 Derivation

We finally arrives at the core of the noun phrase. Similarly to what we do in § 3.2.5, we explore syntactic processes before any argument or attributive is licensed.

3.3.4.1 Dephrasal forms

We have already demonstrated that forms 大褂 and 白大褂 in Fig. 3.12 have undergone syntactic fossilization and are now dephrasal compounds. Similar syntax-in-word forms are not non-existent in English, as we have *do-gooder* or *third worldist*.

招生 in (59) is another form with sub-argument structure internal parts. Although it has a predicator-object internal structure ('recruit students'), this structure says nothing about its valency. There are verbs with a predicator-object internal structure that take objects (44), and there are nouns with predicator-object internal structure that takes one preceding argument (59): the predicator-object structure says nothing about how these forms interact with constituents outside them. So 招生 in (59) certainly has undergone dephrasalization and can be treated as a root most of the time.

3.3.4.2 Other types of compounds

Not all compounds have internal phrasal syntax. Some forms contain roots that never head a noun phrase independently. 机 is a prototypical example of this: in *Xiàndài Hànyǔ Cídiǎn*, none usage of this root has a part of speech tag (except when it is used as a surname). This prompts many to analyze all forms containing this root as complex words. This analysis assumes homogeneity of *complex words*, and ignores possible diverse structural origin of the so-called bound roots. It is for instance possible that these "bound roots" obligatory take arguments like transitive verbs do, in the way described in § 3.3.3. For 机, we have (65). Similarly for 计 we have 血压计, 光度计, 强度计. A certain kind of argument structures still seems to exist: 机 always takes a glued-up verb phrase as its left branch, while 计 always takes a nominal representing a quantity.

(65) 计算机, 缝纫机, 打字机, 拖拉机

What make them deviate from § 3.3.3 is that forms like (64) are not possible (66). More generally, we typically observe that complexity of the "argument" seems to be severely constrained.

(66) *大规模科学计算的机

Another instance of complexity constraint is displayed in (67), where both 念佛 and 念阿弥陀佛 can be interpreted as glued-up predicator-object forms (§ 3.2.5.3) and should be able to be taken as nominal arguments (§ 3.2.5.3, 49); in reality, though, only the shorter form (67a) is acceptable, while the longer form (67b) is not. This fact cannot be explained by fossilization, as these roots can regularly form new forms. Therefore, the structure building mechanism responsible for (67a) is different from constructions in § 3.3.3.

(67) a. [念佛] 堂
b. *[念阿弥陀佛] 堂

Based on the evidence above, we maintain that these forms are instances of constructions "smaller" than those in § 3.3.3. Forms in (65) therefore may be known as (real, as opposed to those in § 3.3.3) *compounds* (cf. discussions in Box 3.8). "Real compounding" is quite active in Mandarin: all the three head nouns in (62), namely 工作, 任务 and 计划, fall under this type. We note that the internal structures of the three forms do not predict their valency,[6] which justifies calling them compounds (Box 3.8).

3.3.4.3 Affixation

Affixation is much more active in the nominal system in Mandarin than it is in the verbal system. (68, 69) illustrate how a nominalization suffix turns a verb phrase into a noun.

(68) 驯兽师

(69) 定义等价性

We note that the valency of 等价 in (69) seems to be preserved after nominalization. The structural parallelism is shown in (70); in particular, the contrast between (70b) and (70c) is consistent with what we see in (63) in § 3.3.3. We may say that the argument structure (but not a full nucleus clause) is formed and nominalized as a whole (Kornfilt and Whitman 2011). The NP 这两个定义 has to be promoted to the possessor position and hence 的 cannot be omitted, leading to unacceptability of (70c) (cf. discussions on 64).

(70) a. [这两个定义等价]$_{\text{clause}}$
b. [这两个定义的等价性]$_{\text{NP}}$
c. *这两个定义等价性

Mandarin also has prefixes in the nominal system, like 老 in 老鼠. Reduplication also applies to nouns, as in 团团伙伙.

The distinction between compounding and affixation is essentially the distinction between content and grammatical morphemes. 性 in (70) has to be an affix, as it is incorporated into the grammar of Mandarin (more specifically, nominalization). A clear distinction is not always possible or necessary, as the progress of grammaticalization from the former to the latter varies among different speakers.

[6] 工作, for instance, looks verbal according to its internal structure, and it does have a verbal usage, which however is intransitive and takes no argument, unlike its nominal usage in (62).

3.3.5 Complexity constraints

Despite the rich grammatical categories and functions revealed by the sketch above, NPs in actual Mandarin texts seems to be constrained in complexity. It is rare, if not impossible, for *de*-less adjectives and complementation to appear at the same time. This means word-to-word translation of long noun phrases in English is often *impossible*, if not awkward (§ 12.1).

3.4 Structure of the lexicon

After a survey of the grammatical system of Mandarin Chinese, we examine what the lexicon has to feed into the grammar. **Lexicalization** means a form being stored in the lexicon, with a (semi-)fixed surface form and/or meaning. Note that the two aspects of lexicalization can be limitedly independent. In the discussions above, the most important instance of lexicalization of forms is probably fixed valency (§ 3.2.4.2, § 3.3.3), which does not necessarily correlate with unpredictable meanings: the meaning of (44) is largely predictable once a reader knows the meaning of the roots. Further, entries stored in the lexicon are not necessarily what are intuitively considered words. In the above sections, we examine the structure of the lexicon of Mandarin.

3.4.1 Roots

Roots that are productively used in (real) compounding (§ 3.2.5.1, § 3.3.4.2) that themselves do not act as heads of noun phrases or clauses by definition cannot be classified as nouns or verbs.

> **Box 3.12: Cross-linguistic significance**
>
> Another field where the role of *roots* is being debated is Semitic linguistics. It should be noted, however, that in Semitic languages, the debate is more about morphological *realization*: the distinction between so-called *stem*- and *root*-based analyses is more about the underlying mechanism of non-concatenative morphology and whether in the mental lexicon of Arabic or Hebrew, the consonants in a root are indeed stored in a line.

Traditionally, roots are classified into bound or free ones. This distinction assumes a clear, unambiguous definition of wordhood, which is not a priori assumed here. So-called bound roots may be licensed as the object of a verb and receive modification in the presence of that verb (§ 3.2.5.4). Other bound roots indeed only participate in compounding (§ 3.2.5.1, § 3.3.4.2). In this way they are comparable to neoclassical roots in European languages (Di Sciullo 2005; Scher and Nobrega 2014).

3.4.2 Lexemes

It is not likely that roots alone are the only things stored in the lexicon. We have briefly mentioned in § 3.1.1.1 that there exist grammatical words in Mandarin, and that they are lexicalized in their forms and possibly their meanings. Consider 吃. It has the ability to head a clause, but rarely the ability to head a noun phrase. This fact – that 吃 *cannot* be understood as referring the action of eating in a nominal environment – is neither absolute or semantically predestined (indeed 招生 below also refers to an action but is used as a noun) has to be dictated by the lexicon, together with the

fact that 吃 typically takes an object. Therefore, 吃-in-transitive-verbal-environment – that's to say, 吃 being *categorized* as a *verb* or more clearly as a *verb lexeme* (Box 3.7) – is a lexical entry in Mandarin. Similarly we have *nouns* or more precisely *noun lexemes* stored in the lexicon: 招生, by virtue of typically appearing in Fig. 3.13 and not a clause, is a *noun* in the lexicon.

Terms like *noun* or *verb* indicate wordhood, which is grammatical wordhood defined according to the strong correlation between morphological wordhood and syntactic environment preferences of a form (§ 3.1.1.1).

Forms stored in the lexicon with similar syntactic environment preferences and morphological properties make up different **parts of speech** or **lexical categories**, which tend to show greater crosslinguistic variances compared with abstract grammatical functions. It is, for instance, possible to have multiple verbal lexical categories (conjugation classes, adjectives appearing without copula), and to have adjectival lexical categories with different preferences of syntactic environments (consider the two Japanese adjectival classes). A classification of lexical categories of Mandarin is done in TODO: table

The conclusion is that the majority of Mandarin lexemes either themselves are morphological and phonological words or can be enriched into morphological and phonological words by what is comparable to inflection in morphologically richer languages. A minority of them are monosyllabic and too short to be phonological words on their own. The overall landscape does not make Mandarin radically different from other natural languages.

3.4.3 Idiomization

Certain forms are formed by prototypical phrasal syntax but have established meanings.

3.4.4 Lexicography

The complicated structure of the Mandarin lexicon has consequences in dictionary editing. 现代汉语词典, which is the dictionary that defines standard usages of Mandarin, is organized according to Chinese characters first. Each character's "meanings", i.e. the morphemes it may represent, are first listed under the entry of the character. If a "meaning" is categorized and can be used as a single morphological word, a part of speech label like NOUN or VERB is given. Otherwise, if it is a bound root that only appears in compounds, no part of speech tag is given. A list of words and idioms containing the character are then given. Most of them are disyllabic, and they are often with part of speech tags. Longer idioms, usually phrasal or even clausal, do not have part of speech tags.

Chapter 4

Nouns

4.1 Bound roots

Some morphemes are clearly content morphemes (i.e. roots) and are productive, but they never appear on their own as (minimal) noun phrases. These roots regularly form nouns by compounding (§ 3.3.4.2).

A good example is 工 'worker'. Its meaning cannot be summarized as something like 'agent of an action', so it cannot be a grammatical formative. It is also productive: we have 劳工 'laborer', 操作工 'operator', 纺织工 'textile worker', 车工 '(lathe) turner', 船工 'boat worker', 电工 'electrician', and much more.

(1) 水温计

(2) 油温计

It is generally not possible to let a bound root directly merge with a form with complicated internal structures. This seems to suggest that Mandarin has "real" compounding in contrast to what is commonly referred to as compounding but is actually nominal complementation (§ 3.3.4.2).

Productivity and lexicalization sometimes show inconsistency. The form 肉匠 was accidentally coined during one conversation I heard, which was intended to mean 屠夫. The form is *not* well-established and clearly not lexicalized, but its structure is valid, and its meaning can be understood compositionally without any confusion.

It should be noted that what are considered bound roots very considerably depending on the register. In scientific writing, for instance, 鲸 is *not* a bound root. In casual speech though 鲸鱼, a form that is misleading if read compositionally, is more common, indicating that the ability of 鲸 to be an independent NP has been lost.

Chapter 5

Adpositions

5.1 Postpositions

5.1.1 Relation with location nouns

Postpositions are frequently said to be a special type of location nouns.

5.2 Temporal constructions

从明天起

Chapter 6

The verbal complex

6.1 Types of verbal complexes

Cross-linguistically, a **verbal complex** is any sequence consisting of the verb(s) in a clause, relevant grammatical markers (tense, aspect, personal pronouns, etc.) and sometimes incorporated constituents, which has a fixed internal structure and cannot be interrupted by other constituents. Different types of verbal complexes may arise from heterogeneous morphosyntactic mechanisms.

Several types of verbal complexes exist in Mandarin. Mandarin is generally recognized as a language lacking inflectional morphology, but it is clear that certain types of constructions can only be explained in terms of something like agglutinative inflectional morphology. We refrain from calling these uninterrupted sequences simply as *inflected verbs*, because the "affixes" in them can sometimes reorder or even split from the rest of the sequences, and some sequences are longer than a prosodic word (2). The term *verbal complex* is therefore used in this grammar.

6.1.1 The lexeme-complement-aspect chain

The first type contains three uncontroversial slots: the verb stem, the so-called **verbal complement**, known as 补语 in Chinese linguistic community (§ 6.4),[1], and the aspectual marker. The verb stem itself may contain suffixes. Usually there is at most one suffix, often a verbalizer like 化.

Whether or not a suffix appear is due to syntactic and sometimes semantic and pragmatic factors (see the relevant sections on each formative). It's possible for only one of the two or even none of it to appear.

(1) is an example in which the aspect marker, the verbal complement, and the verbalization marker in the verb stem all appear.

(1) …并且 企业 [[数字 [化]$_{\text{derivation}}$]$_{\text{stem}}$ [完]$_{\text{complement}}$ [了]$_{\text{aspectual}}$]$_{\text{verbal complex}}$
and enterprise digit VERBALIZE ASP ASP
之后 还 不一定 赚 钱 …
after TODO not.necessarily earn money
'…and enterprises, after digitalizing, do not necessarily earn a lot…'

[1]The term 补语 literally means 'complementation speech', and is therefore often translated as *complement*. In this note I use the term *complement* to refer to grammatical constituents that are somehow more closely related to the main verb, and I choose the (somehow tedious but explicit) term *non-argument complement*.

6.1.1.1 Directional complement as clitics?

When the verbal complement is disyllabic, which actually contains two formatives instead of one (§ 6.4.1), the order of the aspect marker and the directional complement can be swapped (2). This seems to be a consequence of prosody, as the verbal complex in (2a) can be neatly divided into two disyllabic prosodic words (站了/起来), and therefore a reordering is desirable. This suggests that the so-called suffixes, i.e. 起来 and 了, are actually enclitics at the current stage of Mandarin: the verb stem-verbal complement-aspect marker order is not purely determined by morphological considerations, but partly by phonology and prosody.

(2) a. 张三站了起来
b. 张三站起来了

We note that (2b) allows a figurative reading: 'Zhang San finally rises up and stands proudly and independently', while (2a) does not allow such an interpretation. This however can be attributed to 站起来 being first semantically lexicalized as an idiom and then syntactically fossilized, and now forming a synchronic verb root with a given meaning.

6.1.2 Incorporation of personal pronouns

An interesting phenomenon, related to the possible clitic status of the verbal complement and the aspect marker, is that personal pronouns sometimes can be incorporated into the verbal complex.

(3) 我的一个朋友告诉我了这个消息

6.1.3 The V-Neg-V construction

A type of verbal complexes, often known as the V-不-V construction, is used to form interrogative sentences (4). When the verb is disyllabic, often only the first syllable is kept in the first copy of the verb in the verbal complex (5).

(4) 你到底吃不吃

(5) 你打不打算去黄山？

The "verb" appearing in the V-Neg-V construction can also be an auxiliary (6; for why recognizing an auxiliary class see § 3.2.3.1).

(6) 你能不能过一阵子帮我一个忙

From acceptability of (6), it follows that coexistence of a V-Neg-V verbal complex and a verb stem-complement-aspect verbal complex (§ 6.1.1) is possible (7).

(7) 你能不能过一阵子送给我点土特产

6.1.4 Verbal complexes with manner and consequence complements

Some verbal complexes merely contain the suffix 得.

(8) 他骑马骑得气喘吁吁

(9) 他骑得马气喘吁吁

6.1.5 Verb copying

We already observe verb copying in (8), which is obligatory, or otherwise the

(10) 这帮流氓打架打赢了，可是还是进了牢房

6.2 Wordhood

All constructions shown in § 6.1 can be reasonably considered as morphological words, although we can argue that the suffixes are enclitics (§ 6.1.1). It is instructive to see how various criteria for wordhood apply to these constructions, and whether a clear derivation/inflection distinction can be established.

6.2.1 Lexicalization

(11) 约翰考上了哈佛

We know nowadays it's possible to enter Harvard without standardized tests, so 考上 can be completely factually wrong, and even for most students who do have standardized test scores, the admission process is holistic, and 考上, if taken literally, can be rather misleading. College admission in China, on the other hand, is mostly based on the standardized College Entrance Exam, and 考上 has naturally gained an idiomized meaning of 'get admitted to', which explains its usage here.

It is not clear whether 考上 should be considered to form a synchronic root here, as it can be replaced by 考取 or 考进 freely. What happens is more likely that 考 plus an accomplishment verbal complement is considered to form an idiom. Still, we note that 考取 sounds more archaic. There might be several layers of idiomization.

All the forms below are transitive, which is specified by the properties of 读.

(12) 默读熟读

6.2.2 Is valency alternation marked by verbal complement derivation?

We note that the preposition of a prepositional argument (§ 3.2.4.4) in a clause can be incorporated into the verbal complex of that clause as the verbal complement (§ 6.4.3), and if the verbal complex is to be recognized as a morphological word, the verbal complement indicates the existence of an internal argument (13a). Now, if another verbal complex does not license an internal argument (13b), we find that the verbal complex is marking the valency of the clause.

(13) a. 他住在了广州
b. 他去过广州，感觉不错，就住下了

The situation here is quite comparable to that of Latin preverbs. Whether this is to be called derivation is more terminological, as it depends on the definition of the verb stem. We do note that the verbal complement slot is sometimes filled by

6.3 Verb derivation

6.3.1 Historical compounding

驱逐、计算

6.4 Verbal complements

The category of verbal complements is rather heterogeneous, its boundary (expectedly) being somewhat unclear; it includes verbal complements or in other words complex predicates, complement clauses, and oblique arguments.

6.4.1 Directional complements

The directional complement is either monosyllabic or disyllabic (2). In the latter case,

6.4.2 Resultative complements

6.4.3 Time and location complements

In some clauses, the verbal complement slot is filled by a preposition from an argument marked by that preposition.

(14) 摄影师卖掉伦敦市中心大房子，竟然住在了这里

6.4.4 Other things commonly known as complements

6.5 Aspect markers

(15) 标语贴在墙上

(16) 标语已经在墙上贴着了

this means the preposition 在 actually is morphologically merged with the verb 贴, or otherwise we are unable to explain why in the first example, 着 can never appear, while in the second example, 着 can appear.

Although 着 can appear in a matrix clause, its distribution is wider in temporal adverbials.

*他笑着。他[笑着]走了进来

Chapter 7

Verb frames

7.1 BECOME and CAUSE-BECOME verb frames

(1) a. 茶泡好了
b. 我泡好茶了

(2) a. 这只猫死了
b. *坏人死了这只猫

7.1.1 Subject or topic?

At the first glance, the alternation in (1) can be explained by assuming that the subject argument who prepared tea is omitted (5a), and the object 茶 is *topicalized*. This analysis eliminates the necessity of postulating certain valency alternation devices, and is consistent with LaPolla (2009). This analysis however has to be rejected, because subject omission, i.e. pro-drop, is otherwise only used when the subject is known, while in (1a), the subject is indefinite and *unknown*.

This is particularly clear when we do not front the object 茶. (3a) sounds awkward, because since 茶 stays in the core VP, the subject position is empty, and yet its reference cannot be resolved without pragmatic information. On the contrary, when (3a) is placed in a conversational context, e.g. (3b), it is perfectly acceptable, because in (3b), the reference of the null subject can be resolved as the conversational participant, i.e. the target of the question: 'have *you* prepared the tea?'

(3) a. #[泡 好]$_{\text{verbal complex}}$ 茶 了
soak good tea SFP
Intended reading: 'Someone has prepared the tea.'
b. 泡好茶了吗？

Contrasting (1a) and (3a), we find that although the former involves an object fronting operation, it is *less* pragmatically loaded than the latter. This can be explained by the assumption that the object fronting operation in (1) is an argument structure alternation, which involves minimal information structure operation, while (3a) assumes an identifiable null subject. Therefore, we consider the alternation in (1) a valency alternation, and not pro-drop plus topicalization. This also justifies the existence of a subject position in Mandarin clauses.

7.2 Obligatory *bǎ*

(4) 把参考手册当小说看

Chapter 8

Tense, aspect, modality

8.1 A possible tense system?

From a surface form-oriented perspective, Mandarin lacks the category of tense – all semantic tense information is expressed by time adverbs and the default values determined by the aspect.

8.1.1 The location of some time adverbs

There exists a position for time adverbs that precedes modality auxiliaries. This makes it slightly different from that of uncontroversial peripheral arguments (1).

(1) 我 [明天] 可能 能 和 你 讨论 一下
1 tomorrow AUX AUX with 2 discuss for.a.while
'I can have a discussion with you tomorrow.'

This position seems to be the position that some adverbs most frequently appear in. Alternation of this order results in clauses that are either slightly infelicitous or pragmatically marked. In (2), we move 明天 'tomorrow' rightwards, and we find that the more rightwards it goes, the less felicitous the sentence becomes.

We also note that there can be at most one 明天-like "time point" adverb. 之后 'later' has the same distribution with 明天. It and 明天 both appearing is categorically rejected (3).

(2) a. 我[明天]可能能和你讨论一下
b. 我可能[明天]能和你讨论一下
c. ?我可能能[明天]和你讨论一下
d. ??我可能能和你明天讨论一下

(3) *我之后可能能和你明天讨论一下

The distribution of 明天

Interestingly, not all temporal adverbs are able to move to the tense-like position:

(4) a. ?我在周四可能能和你讨论一下
b. 我可能能在周四和你讨论一下

A further piece of evidence hinting at a higher position for time adverbs is that they are easier to topicalize. It seems they are closer to the subject, instead of ordinary peripheral arguments.

(5) 明天我可能能和你在办公室讨论一下

(6) 我明天可能能和你在办公室讨论一下

(7) #在办公室，我明天可能能和你讨论一下

8.1.2 Interpretation of the time

If a clause has no time adverb at all, it is assumed that the situation described by the clause is the case *now*. Thus (8) is obligatorily interpreted as something happen in the present. We note that making the subject a deceased person does *not* enable a past interpretation: (9a) is semantically infelicitous, because Ji Xianlin, an important philologist, has passed away, and (9a) implies that he still lives here now. The intended past interpretation has to be enforced by introducing a time adverb (9b).

(8) 我 住 在 这里
1 live at here
'I live here.'

(9) a. #季羡林 住 在 这里
NAME live at here
'Ji Xianlin lives here. (Intended meaning: Ji Xianlin lived here.)'

b. 季羡林 曾经 住 在 这里
NAME previously live at here
'Ji Xianlin previously lived here.'

Sybesma (2007) argues that the behaviors of the alleged tense system are comparable to those of the Dutch tense system, namely that the tense value is determined by agreement with the tense-like adverb.

8.2 Frequency

(10) 我之后可能每天会来

(11) *我每天可能能和你讨论一下

(12) 我可能每天能和你讨论一下

(13) 我可能能每天和你讨论一下

(14) ?我可能能和你每天讨论一下

(15) 我之后可能能和你每天讨论一下 – two time adverbs, one about frequency, one about time point

(16) 我每天都在床上哭

(17) ?我每天在床上都哭

Chapter 9

Information structure

9.1 Marker of topicalization

As is mentioned in § 3.2.1, topicalization is prevalent in Mandarin grammar, and involves fronting of the topic before the rest of the clause, i.e. the comment. Fig. 3.1 is an example of topicalization. Besides that example, the topic can be marked by a particle (1).

(1) 我啊，最讨厌言行不一的人

The topic marker is not limited to 啊. Attested variants include 呀, 呢, and sometimes 吧.

9.2 Subject being topicalized

(2) 我明天跟你可能能在我的办公室讨论一下

9.3 (Absence of) dangling topics

Some people, like Zhu (2009, § 7.1), equate *subject* with *topic* in Mandarin grammar. Some (especially those from the functional-typological tradition) go further and assert that "the notion of the subject (as the position of the most agentive argument) isn't grammaticalized in Mandarin Chinese", and therefore the topic-comment construction is construed as simply the syntactic coding of aboutness, and this base-generated and syntactically unconstrained topic is called a "dangling topic". This view is rejected in this note, because such accounts usually end up in severe overgeneration. Here I briefly summarize Shi (2000)'s argumentation.

9.3.1 Type 1: Idiomatic phrasal predicate looking like a comment

In the first type of "dangling topic", it's impossible for any NP in the comment to be syntactically related to the topic (3, 4). Such cases however should be analyzed as instances of the subject-predicate construction, where the predicate is a dephrasalized clause.

We notice that in such examples, the "comment" often has already undergone fossilization of various degrees. Changing the comment usually makes the sentences much less felicitous (5), at best highly marked. This is strange if the attested examples are topic-comment constructions, but makes sense if dephrasalization is needed to put the clause 大鱼吃小鱼 etc. to the "comment" position.

Thus, in (3) and (4), the so-called topic is an ordinary subject, and the so-called comment is a predicate. The meaning of the result of dephrasalization may be compared with the English colloquial *I was like, …* construction.

(3) 他们[大鱼吃小鱼]（，厮杀成一片）

(4) 他们[你看看我我看看你]

(5) a. *他们小鱼咬大鱼
b. *他们虾米啃泥底

9.3.2 Type 2: Quantificational adverbial looking like the inner subject

The second type of "dangling topic" is like (6). A topic-comment analysis of (6)

(6) 他们 谁 都 不 怕
3pl who even NEG fear
'They don't fear anyone.'

9.3.3 Type 3: Ellipsis leaving a subject and one predicate

Some people accept (7). Here the NP 那所房子 definitely doesn't come from the words following it, and is therefore recognized as a topic by some (TODO: ref). Note, however, that 幸亏 serves as a clause linker outside (7): (8) is a demonstration of the 幸亏……不然…… linking construction, and we also have its topicalized version (9). (TODO: whether this is parenthesis) We also know in a clause linking construction, often one clause can be omitted in the utterance because it's content can be easily inferred (TODO: ref). So now the origin of (7) is clear: We can get it by omitting the second clause in the comment part of (9). Indeed, if we replace 幸亏 by anything that is adverbial but not a clause linker, the resulting sentence – which now contains a real dangling topic – is not grammatical.

(7) % 那 所 房子 幸亏 没 下雪
that CL house fortunate NEG snow
'For that house, fortunately it didn't snow (or otherwise something bad would happen).'

(8) [幸亏] 去年 没 下雪，[不然] 那 所 房子 早就 塌 了
fortunate last.year NEG snow otherwise that CL house already collapse SFP
'Fortunately it didn't snow last year, or otherwise that house has already collapsed.'

(9) [那 所 房子]$_{\text{topic}}$ [幸亏 去年 没 下雪，不然 早就
that CL house fortunate last.year NEG snow otherwise already
塌 了]$_{\text{comment}}$
collapse SFP

9.3.4 Type 4: Extraction from prepositional adverbials

(??) in § ?? is sometimes regarded as an instance of the dangling topic construction. However, as is shown in § ??, it may just be from topicalization of an NP in an adverbial, with the preposition (and/or the locative particle) removed.

9.3.5 Type 5: Nominal predicate

(10) 这种青菜一斤三十块钱

9.3.6 Type 6: Locational adverbial mistaken for the subject

(11) % 物价 纽约 最 贵
price New.York most expensive
'The price in New York is the most expensive.'

9.3.7 Tentative conclusion

The conclusion is all topics in Chinese are closely linked to a position in the comment, be it a core argument position or a peripheral one. So the notion of dangling topics is to be rejected in Mandarin grammar, and we can always recover the "canonical" i.e. non-topic-comment clause from a topic-comment construction. After this, if the canonical clause can be divided into an NP or a complement clause and a verbal constituent following it, we can uncontroversially say the first is the subject while the second is the predicate. (TODO: predicate def) So equating the subject with the topic is also wrong.

It's possible to find the semantic role of the subject isn't agentive; in this case I assert there is a valency changing mechanism here.

> **Box 9.1: What to expect when people talk about the subject or the topic**
>
> Unfortunately, despite the syntactic tests presented above, there are still many people – even many native speakers – promoting the idea that the Mandarin topic has nothing different with the subject. Here is a list of TODO: ref

9.4 Pseudo-cleft construction

(12) 疾病是每个人都不想碰上的

Chapter 10

Sentence final particles

10.1 Enumeration of possible particles

Chapter 11

Subordination and coordination

11.1 Conditional constructions

Chapter 12

Advices for translation

12.1 Long noun phrase

Mandarin generally does not permit overly complicated NPs (§ 3.3.5), and when it does, these NPs are usually considered suboptimal. This means when translating long NPs to Mandarin, one needs to break a clause containing complex NPs into several ones.

(1) a. *the current extremely difficult situtaion caused by ignorance of the previous administration obliges us to take a radically different approach*
b. 由于上一任政府的疏忽大意导致的极为困难的目前的情况要求我们采取一种全新的方法
c. 上一任政府疏忽大意，导致了如今的情况极为困难。因此，我们需要采取一种新的方法

Chapter 13

Conclusion and discussion

13.1 Traditional controversies

13.1.1 Separable verbs

It has long been noticed that in Mandarin, a verb can be split into two, with syntactic constituents appearing between the two. Our analyses reveal that so-called **separable verbs** or **verb ionization** are heterogeneous. Some instances of verb ionization are because the "verb" in question is either a verb phrase (§ 3.2.5.4) or has a verb phrase counterpart (§ 3.2.5.3). Others are due to incorporation of

13.2 Describing Chinese language(s)

The significance of having a unified framework of description of morphosyntax of Standard Mandarin goes far beyond documentation of a single language. The current situation is that most, if not all, non-Standard Mandarin Sinitic languages are rapidly dying out. Having a solid point of reference in describing them is important. Just as a grammar of French can inspire

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