

Mandarin Chinese notes

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Chapter 1

Introduction

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.

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. 3.3), 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.

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 our framework 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 our framework, this traditional definition of *head* also makes sense: it

corresponds to the core i.e. the center root of a construction, which, of course, cannot always be non-ambiguously defined in constructions like coordination.

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 in 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. Moreover, 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) makes sense in our framework too. We can see this by comparing Fig. 3.3 and Fig. 3.4.

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, verb-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 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 constructions” 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 [DIMINUTIVE]” (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. 3.3).

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

The notion of *words* do not have a primitive status in our descriptive framework. We may want to define wordhood syntactically, but if it’s defined as a small constituency in the sense of generative syntax, then inflectional endings, and even voice markers, are *not* in the same word with the root (or otherwise the whole verb-object phrase is to be recognized as a word), and if it’s defined as a flat-tree constituent, then how shouldn’t *has been working* is a word? We can only define *morphological words* and *phonological words*. 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 to represent the scopes of grammatical categories represented by formatives in a morphological word. In (§ 3.2.4, 14), 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. 3.6, but this introduces invisible nodes in the syntactic tree.

1.2.4 Lexicalization

We understand lexicalization in two aspects: realizational and semantic. (Note that subcategorization can be seen as a consequence of realizational lexicalization: saying a verb is transitive is equivalent to say it can only be phonologically realized in the presence of a TRANSITIVITY feature; Siddiqi 2009.) 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*

¹Culicover (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).

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.

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 on morphological words, or to be more precise, their *lexemes*. Consider the structure [...DO [...TRANSITIVE $\sqrt{\text{hit}}$]_{TransP}]_{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 phonologically 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.²

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.

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*. 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.³

²Note 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).

³This 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?”

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 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.

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 expense 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. 3.3).

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.⁴

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

⁴Readers 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 Tones

2.1.1 Tone sandhi

2.1.1.1 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 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 (§ 2.1.1.1). 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.

2.2.1 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 feet (Feng 2000, § 2.2).

2.2.1.1 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.

2.3 Chinese characters

The preferred writing system of Mandarin is the Chinese character system. Except some characters made in early modern ages, like 尅 'kilogram' or 砵 '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 indicators of morphemes (§ ??). There are, for example, at least seven morphemes sounding *xiān*, and there happens to be seven Chinese characters corresponding to each of them: 仙, 先, 籐, 掀, 锨, 鲜, and 纤.

Like all writing systems, Chinese characters do not completely faithfully represent the underlying linguistic structure. Some characters do not mean anything – they are simply the designated characters representing syllables in certain polysyllabic morphemes. 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. Some characters have regular morpheme meanings but also have merely phonetic meaning in certain words. The character 登 in 摩登 regularly means 'climb', but in the word 摩登, only its phonetic value *dēng* is preserved. Certain morphemes can be denoted by more than one character. The sentence-final particle (SFP) *ba* can be written as 吧 or 罢, the latter hinting its etymology but is now rarely used. Certain characters denote more than one morpheme. The character 会 may mean 'conference' or 'be able to do'.

Thus, Chinese characters provide clues on what is a morpheme, but they are not decisive (Zhu 2009, p. 1.1.4).

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 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). We start our introduction by talking about the realizational part of Mandarin grammar, i.e. morphological typology.

3.1.1 Wordhood

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. If we try to define wordhood according to a clearly defined standard, like subcategorization – what has an unpredictable subcategorization frame is considered a word, and anything larger than it is a phrase – then a word/phrase distinction *can* be done in Mandarin: we can demonstrate that constructions in § 3.2.5, § 3.3.4 are words, while constructions in § 3.3.2, § 3.3.3 are phrases, even though they look kind of like compounding intuitively.

Box 3.1: The blurry boundary between 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*.

The usual tests for morphological and phonological wordhood can be run on Mandarin as well, and we again get unambiguous results. What is described in § 3.2.4.1, for instance, is clearly a morphological word, and phonological wordhood can be defined in terms of prosody (TODO).

What is truly non-trivial is whether and how these three definitions of wordhood overlap. It turns out that the criteria of subcategorization and the criteria of TODO: verb stem definition

On the other hand, prosodic wordhood can often differ from grammatical wordhood defined right above (§ 5.1.1, 2a).

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).

3.1.3 Morphological devices

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 3.2) 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 3.2: 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-predicate 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.

- (1) [张三]_{topic, i}, [[他]_{subject, i} 就 是 [个 王八蛋]_{copular complement}]_{nucleus clause}
 NAME 3 just be CLS turtle-egg
 罢了!
 SFP
 ‘Zhang San is a son of a bitch!’

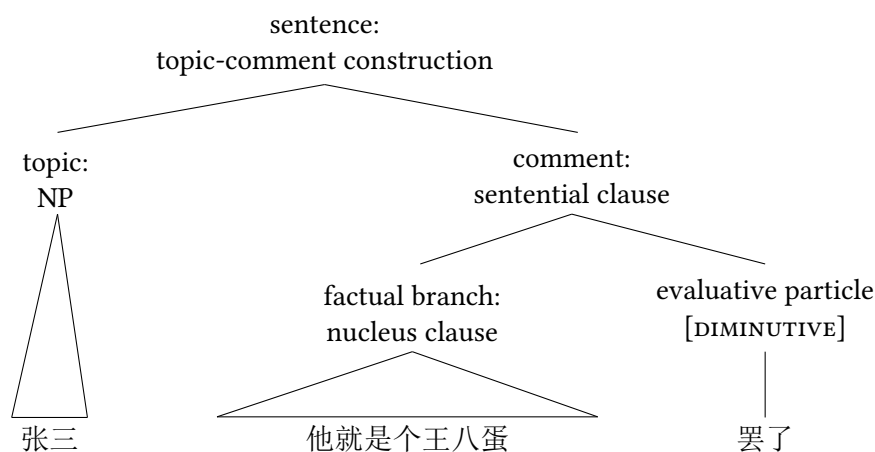


Figure 3.1: Tree diagram of (1)

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]_{topic, i} [幸亏 -_i 昨天 没 来]_{nucleus clause}, [否则 -_i 就
 2 fortunately yesterday NEG come or.otherwise then
 被 困 住了]_{nucleus clause}
 BEI trap v2 ASP
 ‘Fortunately, I didn’t come yesterday, or otherwise I would have been trapped.’

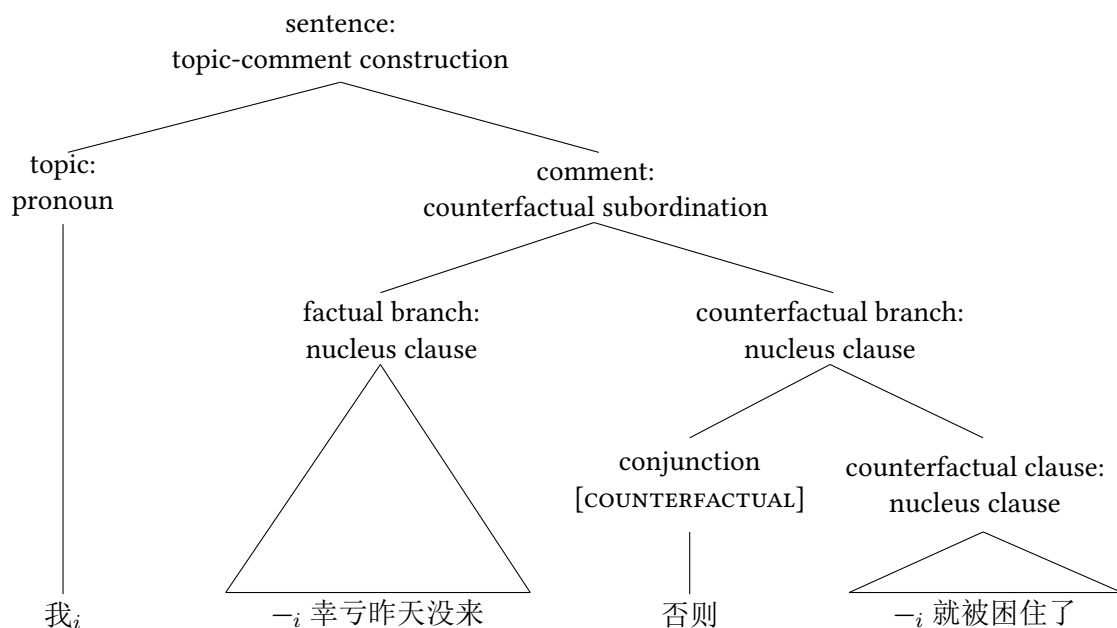


Figure 3.2: Tree diagram of (2)

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),¹ which usually is a (extended) verb phrase but may also be a nominal. 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.

3.2.2.1 The 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 (3). 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 (3d) 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 3d 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 (3a) seems to be the “neutral” order (although it imposes weak topicality to 你 ‘you’, and 吃饭 ‘eat (lit. eat meal)’ is focalized).

¹Dixon (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.

- (3) 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 (§ 8.3). 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 constituent² in clauses like (3a) 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 (3a), the initial 你 *has to* be the agent in the clause, who intentionally initiates the action of eating. (4), on the other hand, is the intransitive use of a CAUSE-BECOME verb (and *not* pro-drop and topicalization; § 6.1.1), 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.

- (4) 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, (5) 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 (6). Therefore, the 既…右… 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: hence 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.

²Note that it is possible that certain constituents, like temporal constituents, naturally appear before the subject.

- (5) [我]_{subject} 既 [不 想 用 这 个 方 案]_{VP}, 又 [不 想 用 那 个
1 CONJ NEG want use this CLS plan CONJ NEG want use that CLS
方 案]_{VP}
plan
'I don't want to use this plan, and nor do I want to use that plan.'
- (6) 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

3.2.2.4 Omission of subject

When the reference of the subject can be resolved, it can be left blank. In (7), the subject is null, but from the conversational context, it likely referred to the recipient of the question: 'have you eaten?'

- (7) 吃了吗

3.2.3 The predicate

(8) is an illustration of a nucleus clause with a complicated predicate. Its constituent structure is shown in Fig. 3.3, following the notation in Huddleston and Pullum (2002). We need to warn that the main information contained in Fig. 3.3 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. 3.3 may be misleading, 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. 3.3 is a compromise.

- (8) 我 [明天 可能 能 在 我 的 办 公 室 跟 你 [讨论
1 tomorrow AUX:possible AUX:ability at my POSS office with 2 discuss
一 下]_{coreVP}]_{extended VP}
a.little.bit
'Tomorrow possiblity I can have a discussion with you in my office.'

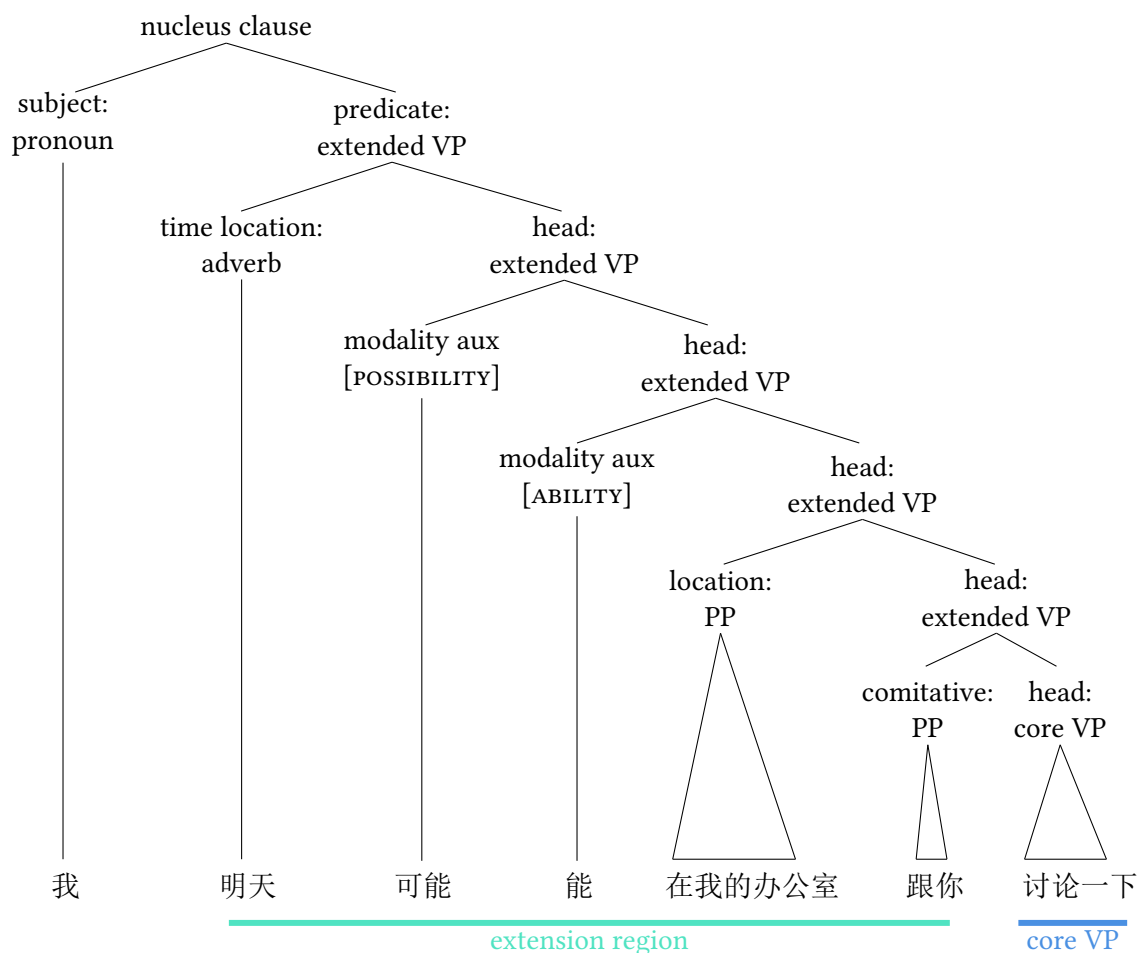


Figure 3.3: Tree diagram of (8)

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.

The existence of the two domains in Fig. 3.3 enables us to redraw the tree in a flat way, shown in Fig. 3.4. This flat-tree analysis has to be accompanied by the scope information of constituents in the extension region: that's to say, 可能 has a scope over that of 能, etc. Once these annotations are added, Fig. 3.4 contains the same information as in Fig. 3.3. Both analyses can be found in various literatures (cf. Quirk et al. 1985, pp. 39,79,121, and the tree diagrams in Huddleston and Pullum 2002), and we need to keep in mind that their differences are much smaller than what appear to be.

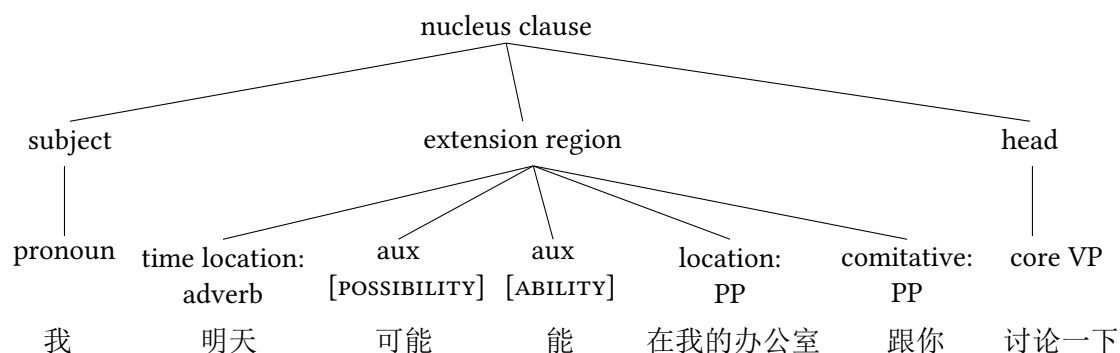


Figure 3.4: Alternative flat-tree diagramming of (8)

It should be noted that in the disposal and passive constructions, the manner phrase may appear *after* the auxiliary (9), 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.

- (9) 我明天 可能 能 在我的 办公室 跟你 [把]_{auxiliary}
 1 tomorrow AUX:possible AUX:ability at my POSS office with 2 BA
 这个 问题 [好好]_{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 (8), 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 (10), 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.³

- (10) [这 辆 车]_{subject:NP} [据说]_{evidentiality} [可能]_{modality} 不 太 靠谱
 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 sub-consciously 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 (§ 7.1).

Mandarin has ample devices to mark point-of-view aspect. This is primarily done by the verbal complex (e.g. 14), via the (semi-)inflectional marking of aspect by 了, 着 and 过 in the verbal complex (§ 3.2.4). but analytic devices exist. In (11), we find that

³Note 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).

the aspect marker 正 is separated from the core VP by a manner phrase, proving that 正 is not a part of the verbal complex. The sentence is diagrammed in

(11) 他在很认真地写作业

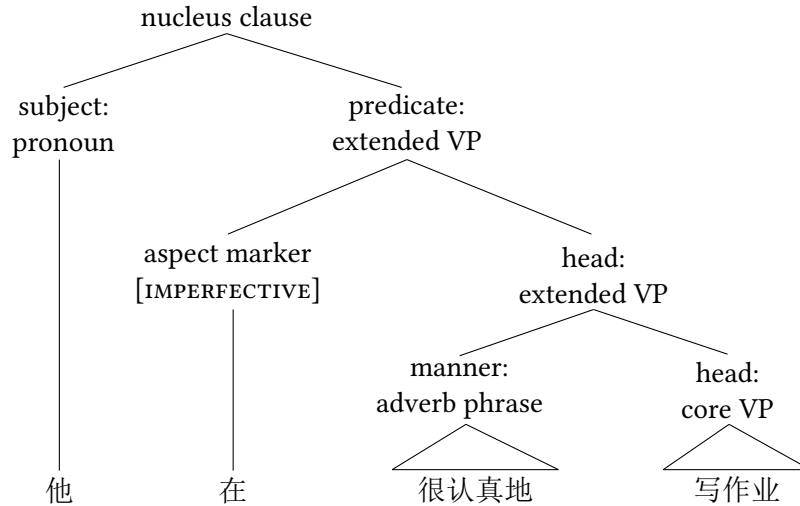


Figure 3.5: Tree diagram of (11)

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 (12).

- (12) a. [他]_{subject} 不 [可能 能 出 国]_{negated}
 3 NEG AUX AUX go.outside.of country
 ‘It’s not possible that he has the ability to go abroad.’
 b. [他]_{subject} 可能 不 [能 出 国]_{negated}
 3 AUX NEG AUX go.outside.of country
 ‘It’s possible that he doesn’t have the ability to go abroad.’
 c. [他]_{subject} 可能 能 不 [出 国]_{negated}
 3 AUX AUX NEG go.outside.of country
 ‘It’s possible that he has the ability to not go abroad.’

(12) shows a negation device that is more flexible in its scope than the English negation. (12b) can be word-to-word translated to English as *he possibly cannot go abroad*, but (12a) and (12c) 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 (8) is not so clear, for instance: it is fairly low in Fig. 3.3, 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 (13). Note that fronting of the comitative to a higher position is possible (§ 8.2).

- (13) a. 我明天可能能在我的办公室跟你讨论一下 (=8)
 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 **verbal complex** (§ 3.2.4.1). The bracketed constituent in (14) is a typical core verb phrase.

- (14) 我 [[做完 了]_{verbal complex} 作业]_{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.

- (15) 我把作业做完了

3.2.4.1 The verbal complex

Several types of verbal complexes exist in Mandarin (§ 5.1). In (14), 完 is the verbal complement, and 了 is the aspect marker (§ 5.1.1). 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. 3.5, we can represent the structure of (14) in Fig. 3.6. But further, we note that 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. 3.6. The possible types of formatives in the verbal complex and their structural origins are described in § 5.1.

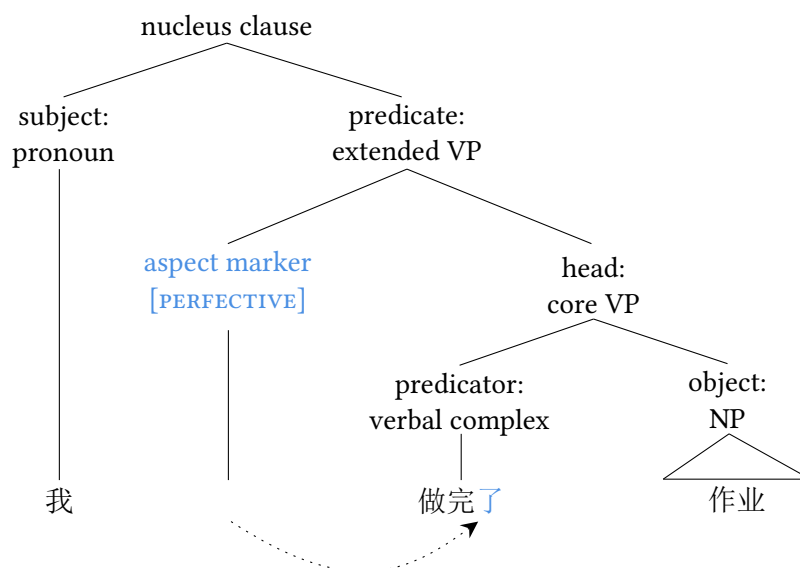


Figure 3.6: One tree diagram of (14)

The verbal complex is sometimes *separable*, meaning that other constituents within the verb phrase can be incorporated into it. In (16), for instance, the object is incorporated into the verbal complex. The incorporated constituent is not limited to the direct object.

- (16) a. 这件事你关什么心啊
b. 这件事你关心什么啊

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 (17).

- (17) 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 (18). It should be noted that not all BECOME verbs can receive a CAUSE-BECOME verb frame (19). We also note that the alternation in (18) cannot be explained by topicalization (§ 6.1.1).

- (18) a. 茶泡好了
b. 我泡好茶了
(19) 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 (20).

(20) 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 (21). But counterexamples exist (22).

(21) *这只猫正在死

(22) 我正在泡茶

The A and P arguments discussed above are not the only types of arguments in Mandarin clauses.

First, the duration of a Mandarin DO clause can be measured by a so-called **semi-object** (23). This is related to the so-called pseudo-attributive construction (24; § 3.2.4.4).

(23) 我工作了一年

(24) 干了一个月的活

Second, 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 (25). 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 (26).

(25) 我住在上海

(26) a. 卡车装满了稻草

b. 他把卡车装满了稻草

Finally, there seems to be a DO-AFFECT-PATIENT construction (27). 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 (28), 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.

(27) 阿飞抢了我一顶帽子

(28) 打了他一个耳光

3.2.4.3 Verb-particle constructions

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

3.2.4.4 Pseudo-attributive constructions

In the pseudo-attributive construction, a constituent usually appearing as a determiner of a noun phrase, like a numeral (29) or a possessive (30), is inserted into a verb phrase. This constituent is often known as a pseudo-attributive. We notice that a pseudo-attributive can be incorporated into the verbal complex even when the verbal complex has no analyzable internal structure (31), or when its structure clearly is not subject to nominal attributive modification (32). The explanation

(29) 我们干了一年的活

(30) 你当你的老师

(31) 幽了他一默

(32) 你保你的守

3.2.4.5 Verb copying construction

(33) 做工做了一星期

3.2.5 Derivation

3.2.5.1 Compounding, dephrasalization, affixation

Frequently, the main verb itself has a synchronically analyzable internal structure. In the simplest case, the subcategorization frame of the main verb can't be regularly predicted from the internal structure of the verb stem (on why we can postulate a stem, see § 5.1). In this case the verb stem looks not too different from a root without internal structures.

An example is given in (34). In this example, we note that 关心 has an internal verb-object structure. The sequence 关心他 can't be explained by any attested verb frames in Mandarin (chap. 6), and therefore 关心 can only be analyzed as a dephrasalized verb phrase, which is re-categorized into a verb with its own subcategorization frame.

(34) 张三的女朋友很关心他

Other more or less cross-linguistically common derivational devices include verbalization suffixes (§ 5.1.1), and also prototypical full fossilized compounding which gives rise to words like 驱逐, which can't be analyzed in the synchronic syntax of Mandarin (§ 5.2.1).

3.2.5.2 Glued-up verb-object structures

What makes Mandarin special is the existence of what Zhu (2009, pp. 128-9) calls *glued-up verb-object structures* (粘合式述宾结构). A glued-up verb-object structure usually is disyllabic, in which the verb has one syllable and the object has one syllable, without any other constituents. A glued-up verb-object structure enjoys properties not shared by prototypical verb phrases, which can be arbitrarily complex.

(35) presents an instance of this phenomenon. 念佛 has a verb-object internal structure, but this doesn't mean it is a prototypical verb phrase. The contrast between (35a) and (35b) means that 念佛 can be used as a nominal while 念阿弥陀佛 can't (cf. 43). On the other hand, a clause headed by 念佛 can be generated without assuming

any fossilization: if 念哪一尊佛 in (35c) is acceptable, then so is 念佛 (in which the WH-pronoun, the numeral and the classifier are all removed from the object).

- (35) a. [念佛] 堂
 b. *[念阿弥陀佛] 堂
 c. 一些人念佛的时候不知道自己在[念哪一尊佛]_{VP2}

This grammar tentatively assumes that there exists two versions of 念佛, one has undergone dephrasalization, and the other is regularly built by phrasal structural rules of the verb phrase. The former comes from first semantic lexicalization and then syntactic fossilization of the latter. Thus the first version of 念佛 is a compound, which can be categorized either as a noun (and thus we have 35a) or as an intransitive verb.

3.2.5.3 Object being bound morpheme

Another type of unusual grammatical units that look like VPs license objects that do not typically appear as heads of NPs (36a vs. 36b). 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 (36), we note that the object 亏 can be modified by 这个, and can be topicalized (36c). 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 (36b) and acceptability of (36c).

- (36) 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, and they do not necessarily have verb stem counterparts. 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**. A nominal can form a NP on its own (e.g. 39).

(37) 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 (38).

- (37) 我的 这 二十 件 [大白 褂子]_{nominal}
 1-POSS this twenty CLS big white robe-DEMINUTIVE
 ‘these twenty big white robes of mine’
- (38) ?这二十 件 我的 [大白 褂子]_{nominal}
 this twenty CLS 1-POSS big white robe-DEMINUTIVE
 ‘these twenty big white robes of mine’

3.3.2 Adjectives

Although the noun phrase in (39) 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 (39) and *a big white robe*.

- (39) 大白褂子

The structure of (39) therefore is represented in Fig. 3.7. 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. 3.3: 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. Calling 白褂子 a “NP with color modification” however makes the tree diagram tedious to read and Fig. 3.7 is a compromise.

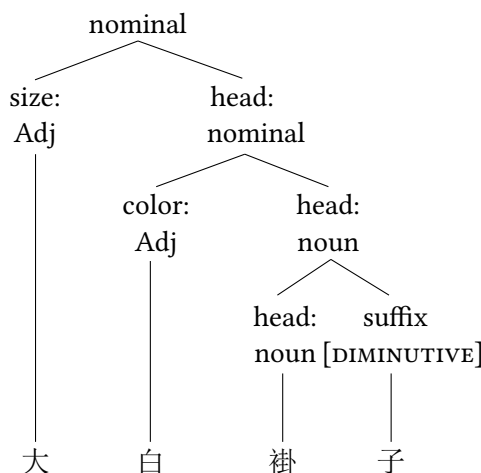


Figure 3.7: Tree diagram of (39)

In this particular case, if we swap 大 and 白, the result is acceptable (40; 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 (40) and its fixed meaning suggests that (40) is a compound, while (39) is a NP.

- (40) 白大褂

The historical origin of 白大褂 likely dephrasalization of the regular adjective modification phrase [[白]_{color adj} [大褂]_{NP}]_{NP}, in which 大褂 in turn is a dephrasal compound. The structure of (40) therefore can be represented as Fig. 3.8.

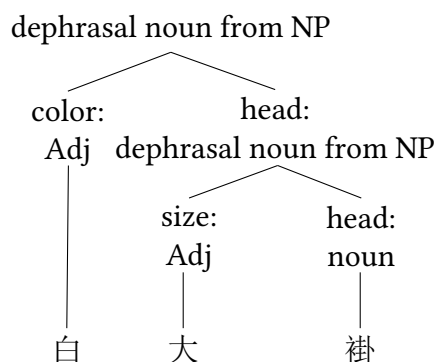


Figure 3.8: Tree diagram of (40)

3.3.3 Complementation

At the first glance, (41) looks like a compound: the three branches, 研究生, 招生 and 工作 are simply put together, and the meaning is transparent. Some sort of subcategorization however exists within these so-called compounds. We note that (42a) sounds fine, while (42b) 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.

- (41) 研究生 招生 工作
 research-student recruit-student work
 ‘Graduate student recruitment’
- (42) 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’⁴
- 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’

There however is one thing that makes (41) look like a compound: the argument(s) it selects is expected to be about *classes* of objects and can’t be referential. That’s to say, (43) is *not* acceptable, because the NP 我那个同学 ‘that classmate of mine’ refers to a certain person, while arguments selected

- (43) *我那个同学招生工作

Finally, we note that 工作在 (41) takes 研究生招生 as its argument. We know this first because 工作 can be replaced by many other forms (44), and the test in (42) applies to all examples in (44) 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 have Fig. 3.9.

- (44) a. 研究生招生工作

⁴In Standard Mandarin, 高校 means ‘higher school’ or ‘higher education institutions’, i.e. colleges. High schools are translated as 高级中学 ‘high middle schools’, abbreviated as 高中.

- b. 研究生招生任务
- c. 研究所招生计划

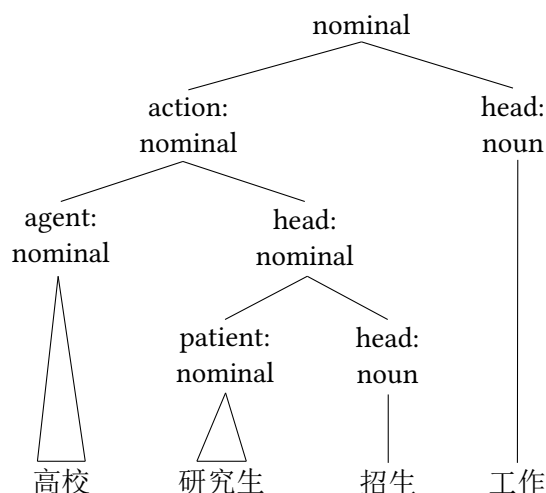


Figure 3.9: Tree diagram of (42a)

3.3.4 Compounding and derivation

There are real compound nouns in Mandarin. The dephrasal nouns 大褂 and 白大褂 in Fig. 3.8 can be analyzed as compounds from a purely synchronic perspective.

招生 in (41) is another authentic compound in this sense. Although it has a verb-object internal structure ('recruit students'), this structure says nothing about its sub-categorization frame. There are verbs with a verb-object internal structure that take objects (34), and there are nouns with verb-object internal structure that takes one preceding argument (41): the verb-object structure says nothing about how these forms interact with constituents outside them. So 招生 in (41) certainly has undergone dephrasalization and can be treated as a root most of the time.

Besides dephrasal nouns with internal structures that still conform to the synchronic syntax, there are compounds whose internal structure is no longer recognizable to synchronic phrasal syntax. All the three head nouns in (44), namely 工作, 任务 and 计划, fall under this type.

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 (§ 9.1).

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.

3.4.1 Roots

Traditionally, roots are classified into bound or free ones. This distinction assumes a clear, unambiguous definition of wordhood.

3.4.2 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 and are productive, but they never appear on their own. 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. Yet

Chapter 5

The verbal complex

5.1 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.

5.1.1 The verb stem-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 (§ 5.3),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]_{derivation}]_{stem} [完]_{complement} [了]_{aspectual}]_{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...’

¹The 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 lexical head, and I choose the (somehow tedious but explicit) term *non-argument complement*.

When the verbal complement is disyllabic, which actually contains two formatives instead of one (§ 5.3.1), 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.

5.1.2 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) 我的一个朋友告诉了我这个消息

5.1.3 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 (§ 5.1.1) is possible (7).

- (7) 你能不能过一阵子送给我点土特产

5.1.4 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

5.1.5 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

5.2 Verb derivation

5.2.1 Historical compounding

驱逐、计算

5.3 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.

5.3.1 Directional complements

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

5.3.2 Resultative complements

5.3.3 Time and location complements

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

- (11) 摄影师卖掉伦敦市中心大房子，竟然住在了这里

5.3.4 Other things commonly known as complements

5.4 Aspect markers

- (12) 标语贴在墙上

- (13) 标语已经在墙上贴着

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 6

Verb frames

6.1 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

6.1.1 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 (3a), 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]_{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.

Chapter 7

Tense, aspect, modality

7.1 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.

7.1.1 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

7.1.2 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. #季羨林 住 在这里
NAME live at here
'Ji Xianlin lives here. (Intended meaning: Ji Xianlin lived here.)'
b. 季羨林 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.

7.2 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 8

Information structure

8.1 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

8.2 Subject being topicalized

- (2) 我明天跟你可能能在我的办公室讨论一下

8.3 (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.

8.3.1 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

8.3.2 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.’

8.3.3 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 its 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]_{topic} [幸 亏 去 年 没 下 雪 , 不 然 早 就 塌 了]_{comment}
that CL house fortunate last.year NEG snow otherwise already collapse SFP

8.3.4 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.

8.3.5 Type 5: Nominal predicate

- (10) 这种青菜一斤三十块钱

8.3.6 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.'

8.3.7 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 8.1: 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

8.4 Pseudo-cleft construction

- (12) 疾病是每个人都不想碰上的

Chapter 9

Advices for translation

9.1 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 10

Conclusion and discussion

10.1 Traditional controversies

10.1.1 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 (§ 3.2.5.3) or has a verb phrase counterpart (§ 3.2.5.2). Others are due to incorporation of

10.2 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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