Mandarin Chinese notes

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Chapter 1

Introduction

1.1 The language and the speakers

Mandarin Chinese is a predominant language in the world, belonging to the Sinitic family. Indeed,

1.2 Previous studies and theoretical orientation of this work

1.2.1 Structuralist generative grammars

There are already sufficient works concerning the grammar of Mandarin Chinese. The tradition used in colleges (and occasionally high schools) is largely structuralist à la Bloomfield: A clause is divided into a topic and a comment, and the comment is divided into a subject and a predicate, and the predicate is divided into a predicator and an object, etc. Examples of works in this tradition usually have names like 现代汉语 'Modern Chinese' (Wang et al. 2004). This tradition is still seen in many contemporary grammars, like Huddleston and Pullum (2002). This tradition is largely coherent with the generative tradition, and indeed there are books which are generative in essence but organized in the traditional and structuralist framework (Deng 2010).

1.2.2 Teaching materials

Teaching materials of Mandarin Chinese are also largely influenced by the structuralist tradition. TODO

1.2.3 Mandarin in the functional-typological tradition

Mandarin also gains much attention in the functional-typological tradition. Li and Thompson (1989) is a "functional" reference grammar of Mandarin, TODO: more references The reason for Mandarin's popularity seems to be the fact that it breaks many previous typological generalizations about isolating languages and constituent orders (Paul 2014, chap. 8).

1.2.4 Theoretical commitment of this work

This notes attempts to reconcile the several approaches in previous researches. It's my belief that the differences between the generative tradition, the traditional structuralist school and a large part of the so-called functionalist (or "Basic Linguistic Theory" (Dixon 2009)) are mainly notational from a practical perspective. Below, by the capitalized Generativism, I mean a mixture of Minimalism, Distributed Morphology and Cartography (but with less flavor of Antisymmetry), which I mean are instructive on grammar description. This leaves out Lexicalist traditions, like the framework used in Deng (2010). Due to the limit of space I will not talk about why I believe a qualitative distinction between morphology and syntax doesn't work for natural languages; I only want to point out that at least in Mandarin, the inner structures of words and phrases have striking resemblance, and the boundary between words and phrases is hard to draw, and this note has to rely on prosodic factors to draw the line (§ 3.1.2.1).

What I want to do here, then, is to incorporate the new perspectives in generative syntax, such as Paul (2014) and Paul (2008), into the structuralist tradition in an accessible and typology-informed way.

Since modern generative syntax contains lots of hidden functional heads, the notion of, say, a DP which is the specifier of T, is to be replaced by an NP filling a subject position in a surface-oriented

structuralist constituency analysis. Both "NP" and "subject" should be labeled on a sub-syntactic tree in the structuralist tradition, while in generative syntax, the label "subject" is a secondary concept: it's an abbreviation of SpecTP (or in an even more fine-grained way, SpecSubjP or SpecNomP). So functional heads can be replaced by syntactic function labels: after eliminating the syntactic functional heads, the label SpecNomP should be replaced by "subject", and the label NomP should be replaced by "subject-predicate structure". On the other hand, in Distributed Morphology we have roots, which reside at the center of an extended verbal or nominal projection (NP-NumP-DP, or vP-TP-CP), and they are recognized as *heads* (in this note referred to as **lexical heads**) in traditional structuralism. This unifies the notation of Huddleston and Pullum (2002), Chao (1965), Zhu (2009) in the traditional structuralist perspective and Generativism.

The Basic Linguistic Theory (BLT) approach (Dixon 2009), or the grammar writing approach accepted in modern descriptive linguistics and typology, is based on *dependency relations* on the other hand. It's also possible to formulate generative grammar in terms of dependency relations, so it can be expected that the BLT approach is still largely equivalent with the grammatical complexity of generative grammar. BLT only recognizes two major types of constituents: NPs and clauses, which are essentially *domains* or *fields* in generative syntax: The former is the DP domain while the latter is the *v*P-TP-CP domain. The complicated binary constituency tree is replaced by a flat tree with lots of dependency relations labeled inside, containing the same amount of information. (We may also say the Basic Linguistic Theory's standard of constituency is "being a relatively independent construction". Then the equivalence between this version of mild constructivism and minimalism is clear (Trotzke 2020).) Note that the Basic Linguistic Theory approach still (although quite implicitly) admits that there is a rank of "closeness" or "height" among dependency relations: the A argument seems to be somehow higher than the O argument, etc., and this information is conveyed by the fine-grained constituency relations in Generativism.

The focus on dependency relation in BLT also leads to a notational difference on what is a constituent. A sequence like *has been exploring* is not a constituent in the sense of the structuralist constituency test in grammars like Huddleston and Pullum (2002) and generativism, but are still recognized as a unit in BLT because its parts always appear together in the surface-oriented analysis. This what is Dixon (2009, p. 109) defines as a *verb phrase*, which excludes the object. From the constituency-based point, such a "phrase" is usually a larger functional domain minus a smaller functional domain; here it's the functional projection below the subject – the verb phrase in Huddleston and Pullum (2002) – minus the object. This definition is meaningful because syntax is cyclic and the object is a DP and therefore is a phase, and above it is another phase, and although the introduction of the subject (by, say, a Nom head which may contain the nominative case) doesn't seal a phase, it still changes the properties of the syntactic tree, so what happen above the object and below the subject – the TAME functional heads, the verb root, etc. – are tightly linked to each other (note that here we are just translating between the constituency-based analysis and the dependency-based analysis), so from a dependency relation-oriented analysis, the sequence *has been exploring* does qualify as a phrase; in a constituency grammar we recognize this sequence has a status but we don't call it a phrase or a constituent. This difference is notational but may be confusing.

A further difference between the Basic Linguistic Theory and Generativism (as well as the structuralist tradition) is the former is claimed to be semantic-based. But first, of course it's possible to have a meaning-first version of generative syntax, and second, there seems to be a "gluing" layer between pure semantics and the phonetic realization and can't be equated with either of the two: the semantics of complement-taking verbs may be coded as a complement clause construction, a relative clause construction (compare *I see a man running* and *I see a running man*), and superficially similar utterances may have different "structures". This is recognized by Dixon, who distinguishes the "prototypical" coding strategy of a semantic concept and other strategies. So there is also no substantial disagreement here.

The Generativism I take here doesn't emphasize on wordhood as a universal concept, and indeed this is what I want here: A word is simply a mini phrase (in the BLT sense), either the realization of a mini constituency tree, or the realization of a span of functional heads and possibly the lexical head or in other words the root. The controversy about what is a word in Mandarin has been around for decades, which I believe is due to the desire to find *the* word as a universal unit, without thinking of the tenet of Generativism that phonetic realization doesn't always transparently reflect in the syntax proper, and that what is universal is likely to be prototypes of functional heads and how they are arranged together; this means we may have categorizer phrases like nP or vP, which can be recognized as minimal words, but whether things like compound words are recognized as words or phrases depends

more on grammatical traditions and external factors like prosody.

I need to note here that many generative works, like Deng (2010), are *lexicalist*:[1] they made a clear distinction between what happens in lexicon and what happens in syntax. Due to space limit I will not discuss in detail the problems with their assumptions; I only want to point out that advocates of the lexicalist hypothesis often can't be consistent: on pp. 242, Deng (2010) says the syntactic structures can also be found in morphology, while on p. 262 he says the syntactic structures listed above can be reduced to the X-bar theory. This means it's highly likely that the inner structure of words also fits in the X-bar framework, which in turn means his classification of syntactic structures based on specifier-complement distinction is not accurate enough: a better approach is to divide syntactic structures into domains, and thus grammatical relations in a lower domain look like head-complement relations in the traditional X-bar theory, and grammatical relations in a higher domain look like specifier-head relations in the traditional X-bar theory. TODO: adjunct

1.3 Origin of data and how to represent them

1.3.1 Intuition

One problem is scholars working on Mandarin grammar have their own judgement on what is acceptable and what is not, which is sometimes not shared by the majority of Mandarin speakers. Some works, like James Huang, Audrey Li, and Li (2013), are heavily criticized for representing not empirical observations of Mandarin but distorted and man-made examples which are used to "support" a pre-accepted theory. My personal opinion is this reflects individual varieties, which is probably influenced by non-Mandarin varieties of Chinese, instead of academic misconduct. We can find sentences that go against the intuition of most Mandarin speakers in the main text – as opposed to examples – of their works as well, which implies these authors are probably sincere about the acceptability of their "weird" examples. Speaking of Huang, (1) appears in Huang (2007), which doesn't sound acceptable for me but seems to be completely fine for him.

(1) 我们建议汉语动词具有下列特征而有别于英语动词 (Huang 2007)

I will use less structuralist constituency trees compared with structuralist grammars. That's to say, for example, the "serial verb construction" is not divided into two verb phrases following rigidly the structuralist tenets, but is analyzed with a flat-tree structure instead, following BLT. But I will also do lots of in-depth morphosyntactic tests, instead of just staring at the surface realization, as many typologists may do.

1.4 Plan of the book

1.5 Remarkable features of Mandarin

1.5.1 The overwhelming influence of prosody

One distinct feature of Mandarin is its morphosyntax relies strongly on *prosody* (Feng 2000). Other components in phonology, strikingly, doesn't have much influence on Chinese morphosyntax, and it will be largely skipped in this note.

1.5.2 Lack of word (and therefore morphology)?

Despite of lack of inflection and lack of contextual alternation of morphemes, Chinese does have some local and syntactically unmotivated operations which are just like morphophonological rules, although they don't necessarily operate on phrases.

An example of this is the verb copying phenomenon, as in 看了一会书 (compare 看书了一会); 看书 'to read' (intransitive; lit. 'to read books') is a fossilized verb-object structure and this verb-object

[1] The term *lexicalist* sometimes means that it's lexical words like verbs or nouns that carry grammatical structures with them, and there is no separate phrase-structure rules seen in early Chomskyan generative works. Since in Distributed Morphology, we can use whether a root can be well spelt out with or without certain functional heads surrounding it to control its subcategorization, Minimalism is also lexicalist in this sense: to say that the root of an intransitive verb only gets spelt out together with a Trans head is equivalent to say that the verb carries a verb-object structure with it.

structure may still have synchronic effects. More radical examples however also exist, like %体了一堂操, which is likely to be linked to [[体操]$_{\text{noun-as-verb}}$了[一堂]$_{\text{time object}}$]$_{\text{VP}}$. In casual speech, verbs borrowed from other languages may also be split and the two fragments of the verb then surround the semi-object (2).

(2) 我 [debug]$_{\text{topic:VP}}$ [de不出来]$_{\text{predicate:VP}}$ [啊]$_{\text{SFP}}$

This phenomenon – the verb being split and the time semi-object getting embedded into the verb – looks just like infixing, although here this infixing operation targets a VP instead of a smaller unit. This justifies the assumption taken at the end of § 1.2.4 that there is no clear boundary between words and phrases and therefore syntax and morphology: It's possible for a phrase to undergo rearrangement without clear syntax motivation that usually happens within a word.

1.5.3 The so-called serial verb constructions

It's often said Mandarin is a serializing (i.e. with serial verb constructions) language. A closer look, however, reveals this is not the case: These constructions are either adverbial clause constructions or complement clause constructions, or maybe certain kind of light verb constructions (§ 5.11). The internal heterogeneity renders the term *serial verb construction* useless.

1.5.4 Ionized verbs

Some verbal units – commonly recognized as verbs, i.e. grammatical words – in Mandarin may be ionized into two parts, with a constituent residing between the two. This involves two mechanisms: the first is TODO: 念佛-like, in which a verb phrase is fossilized, similar to English *in case* or *by definition*, but its object can be extended into a complex NP, and the second seems to be a morphophonological device, by which even a verb without synchronically analyzable inner structure is teared into two parts and a clausal dependent is inserted between the two (TODO: ref). Despite its striking properties for English speakers, ingredients of this phenomenon are all well attested cross-linguistically.

1.5.5 Voices

TODO: several passive constructions

Chapter 2

Phonology and the writing system

2.1 Prosody

By paying attention to stops in Chinese utterances, it can be found that phonological words exist 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. 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.

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).

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]]] (§ 3.3.5). 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 (§ 3.1.2.1).

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 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 (§ 7.2), not by morphosyntactic reasons but for prosodic reasons.

2.2 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 indicators of morphemes (§ 3.1.1.1). 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, 籼, 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 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

Parts of speech

3.1 From morphemes to clauses: levels of units in Mandarin morphosyntax

3.1.1 Morphemes

A morpheme is a minimal unit in grammatical analysis. The meaning of the term has some ambiguity: sometimes, a grammatical item has a clearly analyzable inner structure but the structure no longer has any morphosyntactic significance (§ 3.1.1.2, § 3.1.1.3). In this case, we say the item is *synchronically* a morpheme.

I start the introduction of Mandarin morphosyntax with morphemes for good reasons. Although in most language documentation projects, words – whatever this term mean (§ 3.1.2) – are the smallest unit appearing in the dictionary, this is not the case with Mandarin: the standard practice of lexicography is to record Chinese characters and their "meanings"; in linguistic terms, an entry of a Chinese character includes the follows: its pronunciation(s); historical or synchronic monosyllabic morphemes that may be represented by that character and polysyllabic morphemes containing that character, which may have different pronunciations; (§ 3.1.1.1, § 3.1.1.3, § 3.1.1.2); grammatical words that are made up regularly using one of the morphemes listed above and have already gained a stable meaning. Thus, for someone who wants to do a thorough grammatical analysis of an utterance, finding the morphemes – instead of grammatical words recognized in § 3.1.2 – is the first step.

3.1.1.1 Primitive content morphemes

Most native primitive content morphemes are monosyllabic, examples of which include 红, 大, 你, etc. (§ 3.1.2.2). Polysyllabic primitive content morphemes, like 葡萄, 巧克力, 哥斯达黎加 etc., are mostly borrowed words in different historical stages. There do exist seemingly native polysyllabic primitive content morphemes, like TODO: historical analysis of 牯犒, etc.

Only a subset of the monosyllabic morphemes are able to serve as grammatical words. Some monosyllabic morphemes only appear in in-word slots (like the modifier slot in (6b)), and they are unable to serve as words. Many of them are historically free morphemes but have become obsolete in contemporary usage. The morpheme 观 'observe', for example, still exists in 观鸟 'bird watching' but never appears as a single verb, nor does it undergo delimitative reduplication of verbs (1).

(1) a. *我要去观观那些鸟
    b. 我要去看看那些鸟

It should be noted that bound morphemes are not a homogenous class. Specifically, that a unit contains a bound morpheme as its immediate constituent doesn't mean that unit is a grammatical word. Zhu (2009, § 8.3.2) notes that despite 亏 is a bound morpheme and 饭 is a free morpheme, verb-object constructions 吃饭 and 吃亏 has largely similar morphosyntactic behaviors, in which the object 亏 may be modified just like any other NP, as in 吃了个大亏. We can even move 亏 out of the verb-object structure and topicalize it (2; Zhu (2009) seems to be unaware of this fact). Thus, we reject the analysis given by Zhu (2009, § 8.3.2) himself that 吃亏 is a verb because it contains a bound morpheme,

and conclude that 吃亏 is to be regarded as a usual VP, enjoying the same status of 吃饭.[1] Cross-linguistically, it's quite common for some words to appear mainly in idioms, but this doesn't mean syntactically these idioms are words.

(2) a. 我吃了这个亏
b. 这个亏我今天吃了

The boundary between free and bound primitive content morphemes seems to vary among registers and conversational context. (3) is usually not acceptable, but if the idiom VP 吃亏 has appeared frequently enough, it gradually becomes acceptable. (And in this case, the fact that 亏 usually doesn't appear as a noun even has a focusing effect.) (4) is not acceptable in daily conversation, because the morpheme 犬 is usually a bound morpheme and should be displaced by the more colloquial 狗. The sentence however is perfectly fine in a police officer's recollection of a detective story involving K-9 dogs. Thus the professional background licenses 犬 as a free morpheme.

(3) ？这个亏让我记了一辈子

(4) ？当时我的犬发现现场的气味有点不对劲

Box 3.1: The notion of *free morphemes*

Free morphemes are morphemes that can be words themselves. Of course, this involves the question what is a word. We will see

Another definition seen in Zhu (2009, § 1.1.2) is that a free morpheme is a morpheme that may appear as an utterance. This definition contradicts with other discussions in Zhu (2009), because most function words never appear as a single utterance. So this definition shouldn't be taken seriously.

An overwhelmingly portion of polysyllabic morphemes are able to constitute one-morpheme word and also one-word phrase. There exist however a small number of polysyllabic morphemes that seem to be unable to be words themselves. The root 日耳曼 (from *German*) appears in compound nouns like 日耳曼人 'Germanic people' or 日耳曼血统 'Germanic descent', but almost never appears as a noun itself; similarly, 达达 in 达达主义 also never appears as a word itself.

3.1.1.2 Fossilization

A lot of words have internal structures parallel to those observed in syntax (Zhu 2009, § 2.6), but the structures have already completely fossilized, so they may be synchronically regarded as containing only one morpheme.

A completely fossilized structure may be historically created with an obsolete syntactic device, or be not in the expected part of speech inferred from its etymological (i.e. it appears in syntactic environments that are not expected for its inner structure). The verb 关心 has an internal verb-object structure, but is able to take an object. Since well-attested double object constructions in Mandarin are all unable to cover this usage, we conclude 关心 has already been fossilized into one single synchronic morpheme.[2] Some words with fossilized phrasal origin contain gap inside, indicating that at some early stages they were parts of formulaic speeches and were later reanalyzed as words. The word 例如 'for example' is a connective adverb, but it has a subject-predicate with a gap, and likely arose from a reanalysis of the formula $[[\text{例}]_{\text{subject}}$ 如 $[\ldots]_{\text{object}}]_{\text{clause}}$ 'an example is like …'. This also explains why it appears predominantly at the start of a clause.

One thing is worth mentioning concerning fossilization: although fossilization in syntactic structure is often connected with a conventionalized meaning and being small in size, the three parameters are not that interdependent, although we can observe some weaker-than-expected correlation. Regarding the relation between syntactic fossilization and the size of the unit in question, it should be noted that many languages have idioms that have archaic syntactic structures, like *till death do us part* in English (involving archaic verb-final clausal structures) and 放心不下 (involving an early stage of a type of verbal complement structure) in Mandarin. Regarding the relation between syntactic and semantic fossilization, note that most idioms – what the word refers to in everyday speech – are formed by

[1] Still, this doesn't answer the question whether disyllabic verb-object structures have something significantly different from longer verb-object structures. TODO

[2] It's still possible for 关心 to be split, but this happens without considering the internal structure of the verb (§ 5.4).

regular syntactic devices and yet have gained conventionalized meanings, while it's also possible that some structures have already been semi-productive and yet the meanings of their products can still be regularly inferred compositionally. These facts pose an awkward problem to use: since the syntactic device giving rise to *till death do us part* has already died in contemporary speech, should we claim that the whole expression is a morpheme? And if not, how confident are we when we say some units with fossilized syntactic structures are all monomorphemic? TODO: answer to the question

> **Box 3.2: No generative rule in the lexicon**
>
> Those insisting on a universal word-phrase distinction may say "fossilized structures are assembled in the lexicon before syntax". The position of this note, however, is if something is assembled synchronically, then it has to have something to do with syntax: syntax is the only productive engine. If a morphological device is completely invisible to the rest of the grammar, it is likely to have lost productivity and becomes historical; its products are therefore synchronically morphemes, instead of words with inner structures.

3.1.1.3 Abbreviation

There is a strong tendency to make the abbreviation a prosodic word. The abbreviation of a binary-branching structure usually consists of the first syllables of its two immediate constituents, regardless of the inner structures of the two immediate constituents. Thus [副 [总经理]] 'vice general manager' is usually abbreviated as 副总, and 总工程师 is usually abbreviated as 总工. It's possible that an abbreviation replaces the original word completely. 空调 is historically the abbreviation of 空气调节器, the word-by-word translation of *air conditioner*, but the latter is no longer in active use.

Trisyllabic prosodic words do exist in Mandarin, and trisyllabic abbreviations also exist. The majority of them are three-morpheme coordination structures like 数理化, which is the abbreviation of 数学物理化学 'math, physics, and chemistry'.

3.1.1.4 Function items and semi-function items

Another type of morphemes is the type of function items,[3] like function words, inflection suffixes (which are lacking in Mandarin). Distinguishing between words and phrases means to classify morphosyntactic units according to their possible internal grammatical relations and categories. Thus, we distinguish between NPs and compound nouns, for they possess different internal structures (§ 3.3.4). A function item, on the other hand, is a *label* of a grammatical category and has no inner structure. Thus, defining whether something is a function word or a function morpheme is purely based on *external* factors: if something appears in a morphosyntactic unit commonly referred to as a phrase, than it's a function word, and if it appears in a morphosyntactic unit commonly referred to as a grammatical word, than it's a bound function morpheme. But there seems to be no particularly strong correlation between whether a function item is grammatically a function word and whether it is phonologically a word: a suffix in a long grammatical word can be a phonological word, while a function item, like the Latin *-que*, that is an immediate constituent of a phrase may be glued to another phonological word. In general, the meaning of *function word* is not well-defined, and an accurate description of a function item inevitably involves both of its phonological status and its grammatical status. That's why I refrain from discussing wordhood of function items in the following sections.

Monosyllabic location words, for example, appears in NPs and therefore should be analyzed as words; they however never constituent one-word NPs themselves (§ 3.5). Whether they are words therefore becomes a mystery, and this mystery is merely a wrongly asked question.

Certain borrowed affixes may be unable to serve as words in certain periods. As times goes by, however, they gradually become free morphemes. If clause linking markers like 之所以 and 是因为 are recognized as single morpheme words, then they may be included into the non-prosodic simple word blob and however be unable to serve as phrases. These markers, however, never appear in other places, and their exact status is of no descriptive and comparative interest.

[3] Here the term *grammatical word* means a word defined in the grammar, not phonology; a *function item* means an item that is not lexical and therefore is a part of the grammar. The adjective *grammatical* means being related to grammar and it has two explanations: being defined in grammar and being contained by the grammar; In this note, I use the term *grammatical* to refer to the first meaning, and *function* to refer to the second meaning.

Box 3.3: On some confusing notions of morpheme classification

Many publications on Mandarin based on structuralism à laBloomfield have some outdated, confusing, and not really necessary notions on classifying morphemes. Zhu (2009, p. 16) claims that free morphemes don't have fixed positions, while bound morphemes sometimes have fixed positions. Cross-linguistically, this is simply wrong: in SOV languages like Japanese, the position of the verb is predominantly after all clausal dependents and before inflectional endings, but we would all agree that verb roots are prototypical free morphemes. On the other hand, bound morphemes like derivational suffixes do have fixed positions, but that simply comes from the fact that they have fixed positions in the syntactic structure – and indeed so-called free morphemes can only occupy a limited number of positions in the syntactic structure (lexical head position, compounding attributive position, etc.) and this may lead to a constituent order effect, as is shown in the above example of Japanese.

3.1.2 The existence of words as mini-constituents

3.1.2.1 Comparing grammatical wordhood and phonological wordhood

A question causing endless controversy and confusion is "what is a word". BLT spends a whole chapter (chap. 10) on this topic. It is often said that Chinese is "character-based" or to be precise, "monosyllabic morpheme-based", with no level of grammatical words. This claim is factually flawed, since in Chinese, there *are* distinction between productive morphemes and words. What should be noted are that demarcation of phonological words does not always follow morphosyntactic structures (§ 2.1), and that there are subtleties concerning word-phrase distinction. These are introduced in the following sections.

We expect a grammatical word to be a mini-constituent, which is therefore easily subject to conventionalization, and has limited interaction with the syntactic environment, although definitely not absolutely no interaction – even in English, we have things like *pre- and post-processing*, in which a phrasal structure – coordination – interacts with the inner structures of two bare nouns, and therefore a clear boundary between word or phrase or between morphology and syntax is in principle impossible. Thus, comparing morphosyntactic levels and *phonological* wordhood may be a good idea for us to draw a boundary between words and phrases. This helps us find native speakers' intuition about the smallest unit in natural (i.e. non-linguistic, not in language games, etc.) conversation, which strongly influences how new words are created or how borrowing happens, etc. (§ 3.1.6).

A phonological word, which in Mandarin is defined by prosody (§ 2.1), may be a single-morpheme with a well-defined part of speech tag (§ 3.1.1), like 幽默 'humor (homophonic translation)' and relatively rare trisyllabic cases like 加拿大 'Canada (homophonic translation)', or a mini-constituent (§ 3.1.2.3), like 白菜 'Chinese cabbage (lit. white vegetable)' (§ 3.3.2) or 种树 'plant tree' (§ 3.4.2), or a sequence that according to the constituency-based analysis is not a grammatical unit but does package highly related items, like 交给 'transfer-give (the latter being a verbal complement)' (§ 3.1.2.4). It's of course possible that a phonological word has no morphosyntactic significance at all.

The next question is whether all prosodic words that are also morphosyntactic units are small enough, or some of them are actually phrases. This question is hard to answer for disyllabic verb-object constructions, but the tentative conclusion of this note is they can be regarded as grammatical words (§ 3.4.2). In other cases, prosodic words with morphosyntactic significance are all small units and either have conventionalized meanings or are unable to be extended infinitely. Thus, I recognize them as *grammatical words*, fixing the boundary between words and phrases in a way that is somehow subjective but consistent with the standard employed in many other world languages (§ 3.1.2.4).

There are also non-prosodic grammatical words in Mandarin, including monosyllabic words and polysyllabic words like 哥斯达黎加 (§ 3.1.1.1) and complex non-prosodic words like 总工程师 (§ 3.1.2.5). Thus I call prosodic words with morphosyntactic significance **morphosyntactic prosodic words**.

3.1.2.2 Monosyllabic words: grammatical words, but not prosodic words

As is said in § 3.1.1.1, some – although by no means all – monosyllabic morphemes are free morphemes and

3.1.2.3 Disyllabic mini-constituent words

There are disyllabic units in Chinese that have conventionalized meanings and its inner structure is invisible to any other morphosyntactic rules (§ 3.1.1.2, § 3.3.2, § 3.4.1). Other disyllabic word are made up by two morphemes with a synchronically available device.

A controversy is whether some disyllabic prosodic words that have morphosyntactic significance are actually phrases, in which the two syllables may be analyzed as two grammatical words instead of two morphemes or two meaningless syllables. This is usually not the case for nouns, but is indeed true for verbs (§ 3.4.2). Examples of them include 念佛, 军训, 体操 etc.

Then it's possible that the morphosyntactic prosodic word can be extended into a phrase by inserting more phrasal dependents or by adjoining modifiers to one of the two morphemes. But note that similar processes are possible even for disyllabic verbs without analyzable inner structures, which are surely grammatical words (§ 5.4).

3.1.2.4 Psosodic words with semi-inflection

The standard for a constituent varies, and so does the definition of a mini-constituent. The English form *explore-ed* still needs to take an object, and some syntactic and semantic analysis actually implies that the tense/aspect categories are somehow higher than the object. Thus it can be recognized as a unit – a constituent – because its inner components have strong interlink in dependency relations (§ 1.2.4). In principle, we can also analyze it as *[-ed [explore* object*]*$_{\textit{argument structure}}$*]*$_{\textit{TAME marking}}$; in practice we refrain from doing so (except in fully theoretical works like Distributed Morphology), because *explored* is a *phonological* word (§ 3.1.2.1), and this urges us to recognize it also as a morphosyntactic unit (essentially, by *redefining* what is a unit). The longer sequence *have explored* has a parallel structure, but is not a phonological unit, and therefore some grammars say it's a verb phrase, while others say it's not a phrase. (TODO: ref) Both analyses, of course, are well-justified – which one is to be used depends on the focus of the grammar, and by alternating the terminology the two analyses are equivalent (§ 1.2.4). The definition of the term *word* therefore in principle carries no assertion regarding the nature of the language in question; we do need to choose the definition carefully enough, though, to avoid possible confusion.

In Mandarin, although prototypical inflection is absent, in verbal complement constructions and the aspect system, we indeed can see something similar to *explored* mentioned above, the inner parts of which have strong dependency but do not form a constituent in the most strict sense. What is the status of 爬上 in 他笨手笨脚地爬上信号塔? A word (created by a productive verb compounding rule), a phrase (a verb-complement structure), or just a word sequence without structural significance? Here I follow the opinion in (Feng 2000, p. 86) and Tham (2015) and call it a word, because a sequence like 爬上 is extended in a highly limited way (the only possibilities being 爬得上 and 爬不上), while phrases, in principle, can be extended infinitely, and it is also a prosodic word. This goes against the analysis in (Zhu 2009, § 1.2.7).

3.1.2.5 Non-prosodic complex words

Certain grammatical relations seem to be not a part of NPs and clauses, again highlighting the necessity to introduce a smaller level of constituency (§ 3.3.4, TODO: verb), commonly known as grammatical words. The structures listed above in principle can be extended without an upper bound, and therefore they are not monosyllabic and are not prosodic words.

Just like the case of morphosyntactic prosodic words, these **non-prosodic complex grammatical words** may be created by synchronic morphosyntactic rules, or they may be fossilized or have no internal structure.

Compared to prosodic words, non-prosodic complex words are less "active" in syntax: splitting them is possible in certain cases but is much less frequent. This may be a result of pragmatics: complex words are created to cover a meaning that needs some explanation, and once a complex word is well-accepted, its form and meaning soon gets fixed (because people will not burden themselves), and fossilization occurs rapidly. The term 美利坚合众国 has an analyzable internal structure, but it has already gained a fixed meaning and its parts are never taken out, despite both 美利坚 and 合众国 can serve as grammatical words.

3.1.3 Phrases

3.1.3.1 Noun phrase

Nouns are able to be lexical heads of NPs, including non-prosodic simple words like 哥斯达黎加, as well as non-prosodic complex words. One-word phrases are always possible, and there is almost no attested counterexample.

3.1.3.2 The verb phrase

Transitive verbs can regularly fill argument slots and thus are able to be used as one-word phrases, though they themselves are not sufficient to build one-word predicate VPs. TODO: really??? Certain grammatical words, like some verbal complement structures

(5) a. [看书]$_{\text{subject:verb}}$ 是一件有趣的事情
b. *[走进]$_{\text{subject:verb}}$ 意味着您已经同意了我们的服务条款
c. [走进这个建筑]$_{\text{subject:VP}}$ 意味着您已经同意了我们的服务条款

3.1.4 Types of clauses

3.1.5 The structure of Mandarin grammar

After establishing the status of *words* in Mandarin grammar, we can now discuss the overall architecture of Mandarin grammar in a more disciplined way. Fig. 3.1 summarizes the organization of Chinese lexicon as well as how larger units are built from lexical items. Overlapping of blobs means "having the same form". Thus, the blob representing monosyllabic words is completely in the blob of monosyllabic morphemes. The same is for the relation between non-prosodic simple words (which are neither monosyllabic nor disyllabic) and polysyllabic morphemes. Red arrows mean synchronic morphosyntactic devices, while orange arrows means historical evolution, like grammaticalization and/or fossilization,.

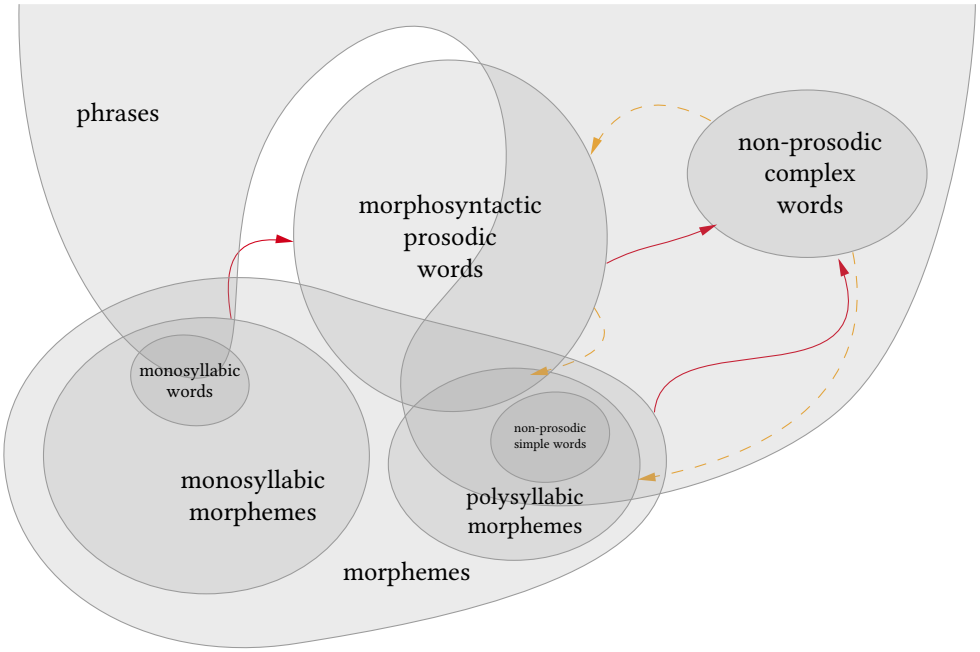

Figure 3.1: From morphemes to phrases.

The sub-phrasal units in Fig. 3.1 are represented in Table 3.1. The +? symbols in the "morpheme" column mean possible fossilization, corresponding to the lower two orange arrows in Fig. 3.1. The upper orange arrow in Fig. 3.1 means word creation by abbreviation. The +? symbol appearing in the "phrase" column means some authors may agree that 走进 is a constituent and therefore they may say it's a phrase (§ 3.1.2.4).

Table 3.1: Sub-phrasal units

index	length	morpheme	word	phrase	example	comment
1	monosyllable	+	-	-	竞, 语	usually from Classical Chinese
2		+	-	-	性 in 等价性, 前 in 窗前	suffixes, location words, and other semi-grammatical items
3		+	+	+	蛇, 猫	usually from Classical Chinese
4	disyllable	+	-	-	达达 in 达达主义	usually borrowed terms, rare
5		+	+	-	觊觎, 葡萄, 空调	from Classical Chinese, borrowed items, abbreviations, and deep fossilization of type 6 and 7
6		-/(+?)	+	-/(+?)	走进, 来到	constituents in BLT only; made of manosyllables
7		-/(+?)	+	+	念佛, 看书, 吃饭	mini-constituents; made of monosyllables
8	trisyllable or larger	+	-	-	日耳曼	usually borrowed terms, rare
9		+	+	+	哥斯达黎加, 滑铁卢，数理化	usually borrowed terms or abbreviations
10		-/(+?)	+	+	副总经理, 总干事	complex word, made of monosyllables and disyllables

3.1.6 Perception of basic units in Mandarin

In English there is a group of clearly defined and largely homogenous morphosyntactic units lying between morphemes and phrases (which means they can be neither morphemes nor phrases, and can be constructed by the former and can be used to build the latter), which is just the grammatical word. They are recognized as basic units by society (i.e. outside of the linguistic community): the length of an article is measured by counting words, not letters, for example.

In Chinese, however, despite the fact that we can still identify grammatical words, the much larger overlap between grammatical words and morphemes and phrases means Chinese characters – representation of syllables in polysyllabic morphemes and rough representation of monosyllabic morphemes – are recognized as basic units of the language. This may be the deriving force for some linguists (who are too eager to "find diversity") to reject the existence of grammatical words in a hurry, although I've already shown this is not the case.

Still, native speakers generally confirm that there is something between the morpheme and the phrase, which people call 词. In everyday speech, non-prosodic complex words have limited use, and monosyllabic words are rarely used because their formality (§ 3.1.1.1). Thus, from Fig. 3.1, we find it's the class of prosodic morphosyntactic words that plays the role of "words" as a level between morphemes and phrases, as well as intermediate units between morphemes and complex words. Prosodic morphosyntactic words are also usually the final destine of abbreviation (§ 3.1.1.3). These morphosyntactic prosodic words are therefore the nature response when native speakers without much linguistic training come up with intuitively when talking about "words" or 词, i.e. intermediate building blocks.

The fuss around wordhood in Chinese arises from the split of several definitions of the term *word*: wordhood defined by morphosyntactic test include is wider than the coverage of morphosyntactic prosodic words, and the range of morphosyntactic words indeed has too much overlapping with morphemes and phrases.

3.2 Overview of classification criteria

3.2.1 Word class labels: noun, verb, adjectives, etc.

3.2.1.1 The nominal-verbal division

Lexical words in Chinese can be roughly divided into nominal ones and verbal ones, or in the Chinese terms, 体词 and 谓词. The prototypical role of nominal words is to fill predicate slots (or to be more precise, to head a phrase that fills an argument slot). Nominal words rarely appear in the verbal complex, though for stylistic purposes, they sometimes do. Verbal words prototypically appear in the verbal complex (chap. 5), but many of them – and clauses without any morphological marking – can regularly appear in argument slots (Zhu 2009, § 3.5).

The fact that verbal categories can fill argument slots or in colloquial words "be used as nouns" urges some to put the verbal categories under the nominal categories, so thus there is only one mega lexical category in Chinese: the nominal category or the Noun. The analysis adopted here does not aim to organize lexical categories in a binary branching classification tree, so the ordinary nominal-verbal distinction is maintained: verbs being able to fill argument slots is not typologically rare, actually, and this shared feature itself does not bring nouns and verbs close enough for them to be merged together.

3.2.1.2 Two adjectival classes

Whether Chinese has a separate adjective category has been debated for decades. Based on a line of reasoning similar to the above verb-as-noun analysis, some linguists argue that the so-called adjectives should be put under the verb category, since they can fill the predicator slot without any morphological marking (Li and Thompson 1989). Since verbs and most alleged adjectives show different morphological behaviors in reduplication, the verb-adjective distinction is kept, and the two are placed under the verbal category.

There still exist a (much smaller) number of alleged adjectives that shows different morphosyntactic properties with the adjectives in the verbal category (Paul 2014, chap. 5). They can be marginally used as heads of NPs, while they do not have reduplication variants. These "adjectives" are thus placed under the nominal category. Thus we have two types of adjectives. In Zhu (2009), nominal adjectives are called 区别词 'distinction word', while verbal adjectives are called 形容词 'adjective'.

3.2.1.3 Other nominal categories

There are more nominal categories than the ordinary noun category and the nominal adjective category. Numerals, for examples, are in another nominal category. Chinese has a rich classifier system, and most classifiers still have strong nominal properties and thus they constitute yet another nominal category. Zhu (2009) calls them 量词 'measure word', because many classifiers have the meaning of "unit". There is also a locative particle class, including 里 in 在房子里, which is sometimes said to be the postposition class because they sometimes have adposition-like properties (TODO: ref: topicalization, and what else?).

3.2.2 Open and close classes; the lexical-functional distinction

3.2.2.1 The hierarchy of openness

The distinction between lexical and functional classes is sometimes subtle. (Zhu 2009, § 3.6) classifies certain categories like locative particles into the nominal class and hence the lexical one, while the locative particle class can definitely be enumerated (Zhu 2009, § 4.4). On the other hand, the author claims that lexical classes are always open and function classes are always closed Zhu (2009, § 3.4). A conflict thus occurs.

The problem here is we have a gradient hierarchy from the prototypical lexical classes to the prototypical function classes. The most lexical class is open to new members, not a part of the grammar, and its members are able to be lexical heads (and thus has a "real part-of-speech label" like "noun" or "verb") of, say, an NP or a verbal complex. A less open class is not so open to new members (just like Japanese verbs and adjectives), but is still not a part of the grammar and its members are able to be lexical heads. A even more closed class is not open to new members, and is a part of the grammar, but its members are still able to be lexical heads. Pronouns are in this type. A prototypical function class, then, is not open to new members, hardwired in the grammar, and its members are never lexical heads. Derivational suffixes are in this type. This last type of forms bring no real part-of-speech label to its realization. We still classify these function items in the grammar into classes, but these classes are somehow less "real".

It's of course not easy to tell a newly discovered part of speech (or *form class*, which may be a word class or an affix class) What's the status of an orientation preverb, which may be found in Japhug (Jacques 2021)? It's a part of the grammar, but does it carry a real part-of-speech label (like "directional adverb")? And speaking of adverbs, what's the status of the English *allegedly*? An adverb filling a peripheral argument position, or an evidentiality marker? We really need to know a lot about language to fix the position of a form class. A common practice is just to shun the details and just say whether a class is lexical or functional, drawing a hard line between the two. So Zhu (2009) mainly uses the criterion of whether there is a real part-of-speech label, and then directive particles are classified into the nominal class and they are in turn considered lexical. But he mistakenly confuses the notion of lexical classes with the notion of open classes, and then we get the self-conflicting asserts in Zhu (2009, § 3.4).

3.2.2.2 Openness of Mandarin form classes

3.2.3 Summary: a tentative part of speech analysis

3.3 Nouns

3.3.1 Monosyllabic nouns

3.3.2 Nouns with historically analyzable inner structure

The unit 白菜 is made up by two perfectly productive morphemes: 白 'white' and 菜 'vegetable', but its meaning is not the composition of the two morphemes: 白菜 means 'Chinese cabbage', not 'any vegetable with whitish appearance'. The word has already gained a conventionalized meaning, and its inner structure is of mostly diachronic interest but not synchronic interest. Therefore, the disyllabic unit 白菜 is the smallest unit fed into morphosyntax, and it of course is not a phrase.

Those insisting on the nonexistence of words in Chinese may explain the observation made above by claiming 白菜 to be an idiom NP: it is indeed a lexical entry, but is regarded as a pre-compiled phrase. TODO:

3.3.3 Nominal bound morphemes

3.3.4 Compound nouns

From (6a) and (6b), it can be seen in certain morphosyntax units, a bare noun may serve as a (restrictive) modifier. The constituent of Chinese NPs is Dem Num A N, and this bare noun modifier position seems to be more internal than the adjective position, as is illustrated by (6c) and (6d).

(6) a. [[定义]$_{\text{modifier:N}}$ [[等价]$_{\text{complement:adjective}}$ [性]$_{\text{nominalizer}}$]$_{\text{N}}$]$_{\text{N}}$ 'equivalence of definitions'
b. [[美国]$_{\text{modifier:N}}$ [苹果]$_{\text{head:N}}$]$_{\text{N}}$
c. *[美国]$_{\text{modifier:N}}$ [红色的苹果]$_{\text{NP}}$
d. 红色的美国苹果

Furthermore, the bare noun position cannot be filled by an NP. The following examples demonstrate this:

(7) a. [联合国] [秘书长]
b. *[[某个组织] [秘书长]]
c. 某个组织的秘书长

The obligatoriness of 的 means the NP 某个组织 can only appear as a modifier via the possessive construction. It cannot fill the slot of 美国 in 美国苹果. So the bare noun modifier position is a function label existing in a unit smaller than the NP – and it has to be the word.

The modifier position can also be filled by a disyllabic

(8) 染发行业

(9) *染头发行业

3.3.5 Adjectival modification in complex noun

3.4 Verbs

3.4.1 Verbs with fossilized internal structures

The verb 关心 'care for' is certainly analyzable as a predicator-object structure, but it takes objects just like any other verbs:

(10) 他 [[[关]$_{\text{predicator:V}}$ [心]$_{\text{object:N}}$]$_{\text{predicator:V}}$ [自己的家人]$_{\text{object:NP}}$]$_{\text{predicate:VP}}$

This means 关心 is not a VP but a grammatical word, or otherwise it is impossible to take another object since there is no valency changing device in use.

3.4.2 Idiomatic disyllabic verb-object structures

Unlike the case of § 3.4.1, there exist some disyllabic prosodic words which are verbal constituents and are often recognized as words. Examples of them include 看书, 做饭, etc. These disyllabic verb-object structures behave just like ordinary VPs when the object is modified by, say, adjectival or nominal attributives; when a semi-object is inserted between the verb and the object, they also follow the same pattern observed in ordinary VPs (§ 5.4.1.2). However, disyllabic verb-object structures do seem to have one thing different with longer VPs: they can appear in compound nouns, while the latter can't (§ 3.3.4). Thus, the morphosyntactic tests outlined in this note decide that they are both words and phrases.

(11) gives an example of this duality. The verb 念佛 in the first example is similar to 美国 in (6b): it serves as a bare modifier (since in Chinese verbal constituents can fill argument slots directly, the fact that 念佛 is a verb is not surprising). The fact 念佛 is able to appear in such a position assures us that it is a word. Then consider (11b). In VP1, a temporal semi-object is injected between the verb 念 and the object 佛, while in VP2, an interrogative phrase 哪一尊 is inserted into 佛 and an NP object is now taken by the verb 念.

(11) a. [念佛] 堂
b. 老太太 [念了这么久佛]$_{\text{VP1}}$，却不知道自己在[念哪一尊佛]$_{\text{VP2}}$

The solution used in this note is to regard 念佛 in (11a) as a word, while the two VPs in (11b) as phrases. 念佛 as in 老太太经常念佛 can be interpreted as a word or as a phrase without making any difference. 念佛 as a word is something like *Buddha-praying*, while 念佛 as a verb is something like *pray to Buddha*. This agrees with the account of Feng (2000, p. 82), in which 念佛 is a morphosyntactic word (the original term being a 句法词 'syntactic word'), which is created by morphosyntactic rules and has a inner structure that is (partially) transparent for other morphosyntactic rules, while 关心 is a 'lexical word' (not the same with *lexical word* in the rest of this note which means words that are not a part of the grammar), which is taken out of the lexicon directly and has no synchronically analyzable inner structure. This also agrees with the claim in § 3.1.2.1 that all prosodic words with morphosyntactic significance are indeed grammatical words and not phrases.

Box 3.4: Notes on one previous analysis

The solution here is a generalization of the solution taken by Zhu (2009, § 1.2.6). Zhu (2009) recognizes three classes of grammatical structures, 组合式 'composition-style', 粘合式 'gluing-style', and 复合词式 'compound word-style'. (TODO: ref) A gluing-up-style structure, in his definition, seems to be a regularly formed structure containing elements smaller than usual phrases – bare grammatical words? – and yet is a phrase itself, while a compound structure is within a grammatical word. Thus, in his analysis, 吃饭 and 念佛 are gluing-up structures and are phrases. This analysis is based on the idea that if a structure contains a bound morpheme as one of its immediate constituent, it has to be a grammatical word, while if a structure contains free morphemes and doesn't have a highly established meaning, then it has to be a phrase; the first idea has been refuted in § 3.1.1.1, while the second idea confuses the parameter of syntactic size and the parameter of established meaning, which are almost orthogonal to each other. So his analysis is not valid, and his gluing-up structure should be merged with the compound word structure (but we need to note that in the context in this box, the term *compound word* refers to words with synchronically analyzable internal structures, *not* words in § 3.4.1). Indeed, he recognizes that the syntactic behaviors of the two are highly close to each other (pp. 128-129).

3.4.3 Idiomatic clauses as a predicate

Some clauses (usually idioms), like 大鱼吃小鱼, or 你看看我我看看你, despite having perfectly analyzable internal structures, are used collectively as a *verb* (§ 7.7.3.1).

3.5 Locational words

Monosyllabic location words like 前 may be analyzed as words because they can be attached to an arbitrary NP to denote a place near the place denoted by that NP, as in [[那座老旧的房子 [前]$_{\text{location word}}$]$_{\text{NP}}$ 有一口井]$_{\text{clause}}$, and what only appears as immediate constituents of phrases are of course words,[4] but they never appear independently as NPs.

3.6 Prepositions

Though all Mandarin prepositions have verb origins and therefore may be classified as a subclass of verbs by some, it's necessary to distinguish a separate preposition class. Criteria of prepositions include TODO: ref

Box 3.5: The term *coverb*

In

[4] I'm talking about morphosyntactic words here. It is possible that something is a morphosyntactic word appearing at the level of phrase is incorporated into a word nearby phonologically, though this is not the case in Chinese.

3.7 Other grammatical “coverbs”

TODO: 把, 被, etc.; put the surface constituent orders here and link them to the chapter about the verb phrase

Chapter 4

The structure of noun phrase

No morphological case, number, and gender categories are attested in Mandarin. There is a word class system or in other words classifier system, however. In most cases when a numeral appears in an NP, a classifier follows immediately after the numeral. Attributives – both adjectives and relative clauses – follow the classifier. The demonstrative, if any, appears before the numeral, and even when there is no numeral, there is frequently also a classifier.

The template of NPs, therefore, belongs to the Dem-Num-A-N type, with the classifier residing between Num and A.

Chapter 5

The verbal complex and the verb phrase

5.1 Introduction

Mandarin is generally regarded as a prototypical analytic language, without traditionally acknowledged verb inflections, but several highly productive (as opposed to arguable historical derivation) verbal affixation devices have been attested. I use the term *verbal complex* to cover the main verb and the suffixes. The structure of the verbal complex is highly intertwined with verb valence, and therefore describing the verbal complex on its own is not feasible. Instead, this chapter describes the VP – the verbal complex plus internal clausal complements, with the subject being an external complement – as a whole.

There are several notable systems in the verb phrase: the verbal complement system, the objects (with various numbers, positions and semantic roles), the lexical aspect (without explicit marking but with grammatical consequences), negation (if any), and the aspectual marker.

Some types of verbal complements – the resultative complements, the directional complements, and the potential complements (§ 5.2) – and the aspectual system (§ 5.6) are materialized as suffixes in the verbal complex. Inside the verb stem, we still have a derivation system, like 化 '-ize'. Therefore, there are roughly three subsystems in the suffixes in verbal complex.

(1) is an example in which all the three systems appear. In real world speeches, such combinations have relatively lower distributions, possibly because of the prosodic constraint that verb shouldn't be too heavy unless it appears at the end of a clause (sec:vp.prosody).

(1) …并且企业 [数字 [化]$_{\text{derivation}}$ [完]$_{\text{complement}}$ [了]$_{\text{aspectual}}$]$_{\text{V}}$ 之后还不一定赚钱 …

It should be noted that verbal complements have limited mobility and therefore are not strictly affixes. The linear order between the aspect marker and the verbal complement, if any, is not completely fixed (2). In the first sentence of (2), 了 is an aspectual suffix (§ 5.6), while 走 is a verb which never appear without an argument in uncontroversial phrasal grammar. So we conclude 了 and 走 are suffixes, and by structural comparison, we conclude 过来 in (2b) is also a suffix, with the same status as 走. But there comes (2c), in which 过来 moves to the end of the sentence.

(2) a. 他 带 走 了 他的 文件
3sg carry go.away PERF 3sg-POSS file
'He carried his files away.'

b. 他 带 [过来] 了 三 瓶 汽水
3sg carry come PERF three bottle.CL soda
'He carried here three bottles of soda.'

c. 他带了三瓶汽水[过来]

Besides the phenomenon shown in (2), it's also possible that a part of the verb that not a morphosyntactic constituent at all is scattered to the end of the VP, also the acceptability of this structure varies among people (§ 5.4). The formation of the verbal complex therefore involves multiple levels of operations motivated by syntactic (i.e. more compositional) and morphological (in the sense of Box 5.9) operations.

The verbal complement system is another remarkable feature of Mandarin,

Box 5.1: On the notion of *complements*

The Chinese term 补语 corresponding to my *verbal complement* is frequently translated into the English term *complement*. This creates some confusion, because the term *complement* can also denote clausal dependents that are arguments of the main verb, as in Huddleston and Pullum (2002). The term *non-argument complement* may be used to avoid this confusion. There are, however, further confusions: Should we regard a clausal dependent that records the quantity or amount of an action as a non-argument complement? This construction can also be seen in Latin, like the Latin accusative expression of time (Greenough and Allen 2013, § 423). Thus, I use the term *verbal complement* to refer to things like 完 as in 做完了.

The so-called serial verb constructions aren't mentioned here. Paul (2008) and Deng (2010, § 9.4) summarizes several constructions that are frequently referred to as serial verb constructions, and points out after deeper investigation, they can all be described in terms of the usual complement clause constructions, purpose clause constructions, etc. that are well attested cross-linguistically (§ 5.11).

5.2 Verbal complements and internal objects

Depending on their sizes, verbal complements can be divided into phrasal verbal complements and suffixal verbal complements. Suffixal verbal complements include **resultative complements**, **directional complements**, and **potential complements**. Phrasal verbal complements include **state complements** and **prepositional complements**. In each VP there is at most one verbal complement: thus, the existence of a directional suffix automatically excludes all phrasal verbal complements.

There are also a class of clausal dependents that are traditionally analyzed as objects, but are extremely inactive in structure building after the argument structure is finished. They seem to be in contrast distribution with verbal complements. They therefore are to be classified together with verbal complements (Deng 2010, pp. 188-190).

5.2.1 The directional complement

5.2.1.1 Monosyllabic directional complement

5.2.1.2 Disyllabic directional complements

Box 5.2: Phrasal directional complement?

The VP-final disyllabic directional complement seen in (2c) may also be seen as a phrasal verbal complement (Deng 2010, p. 120), but this is due to his strictly lexicalist analysis; in my approach outlined in § 1.2.4, even though the directional complement in (2c) doesn't appear together with the rest of the verbal complex, the fact that it's small in size and it's constrained in productivity means it should be put together with other directional complements.

5.2.2 The state complement

Box 5.3: Structural ambiguity after 得

There are two structures corresponding to the 得-NP-VP sequence. In one case, like 这文章写得谁也看不懂, the NP-VP sequence after 得 is a clause, which, together with 得, constitutes a state complement construction. In another case, like 这条山路走得我累死了, the NP immediately after 得 is the THEME argument associated with the BECOME argument structure, while the VP is a clause with an empty subject that constituents the state complement construction. This difference can be tested by trying to remove the current subject and see whether we can still find a related grammatical sentence. In the second case, we have 我走得累死了, which has a structure parallel to 这文章写得谁也看不懂, while in the first case it's impossible.

5.2.3 Verbal objects

Some are complement clause constructions
Purpose clause

(3) 你当我傻吗

(4) 我准备明天去骑马

(5) 他跪下来求我

TODO: 为动，死国可乎 etc.
What about 笑天下可笑之人
It should be noted that the position of the complement clause is lower than the direct object.

(6) 他把这个消息告诉了我

(7) 他告诉了我这个消息

(8) 他告诉我张三脑袋被驴踢了

(9) *他把张三脑袋被驴踢了告诉了我

Here, the NP 一顶帽子 seems to be the internal object, which specifies "the amount" of the action, while the

(10) 他抢了我一顶帽子

(11) 我被他抢了一顶帽子

> **Box 5.4: Internal object and the X-bar scheme**
>
> Thorough the book, Deng 2010 analyzes internal objects as complements of verbs. It's however equivalent to say that internal objects are introduced by functional heads lying in deeper layers in the *v*P domain. Many phenomena previously attributed to the specifier-complement distinction now can be captured by something like the phase theory (this doesn't mean the current version of the phase theory is adequate, but the idea is important).

5.2.4 Prepositional complement and preposition incorporation

交给, etc. % 住在了

5.2.5 Instrumental object

(12) 我们今天准备吃食堂

5.3 Subject and direct object in the argument structure

5.3.1 Overview

Cross-linguistically, the argument structure concerning the subject and the object of VPs (not verbs: a verb may project into several different VPs) involving zero or one objects (not including so-called semi-objects in § 5.4 – their behaviors seem to be largely orthogonal to the content of this section) may be prototypically divided into the following contrasting classes (Deng 2010, chap. 6):

- The BE type, describing a static state, with one argument (§ 5.3.2).
- The DO type, describing a dynamic event, with one agentive argument and one possible patientive argument. The agentive argument always goes to the subject position and therefore goes out of the VP (§ 5.3.3).
- The BECOME type, describing a dynamic event, with one argument being the participant of this event and the "state-transition" caused by the event. The argument may be agentive or patientive semantically. The argument is raised to the subject position.

- The CAUSE-BECOME type, a dynamic event, with one argument being the causer, and the other argument being the participant of this event. The causer is raised to the subject position.

A verb allowing alternation of the third and fourth verb frames therefore is a S=O ambitransitive verb, and a verb with an optional patientive argument is therefore a S=A ambitransitive verb. It should be noted that although a CAUSE-BECOME VP is just a CAUSE VP plus a causer, this doesn't mean all verbs appearing in one of these structures are S=O ambitransitive verbs. I therefore intentionally draw a line between the BECOME structure and the CAUSE-BECOME structure, indicating that the availability of CAUSE is not automatically ensured. 死, for example, only appears in the BECOME structure and not the CAUSE-BECOME structure.

Box 5.5: Light verb structures and unaccusativity

What we are seeing here is actually light verb structures. That a verb can only appear in a CAUSE-BECOME structure can be explained by stipulating that the verb root can only get appropriately spelt out together with the CAUSE and BECOME light verbs.

An intransitive verb from the third category is often called an **unaccusative verb**, and in contrast, intransitive verbs belonging to the second type are **unergative verbs**. The terminology is unfortunately confusing because this has nothing to do with alignment: an ergative language can still have unergative verbs. Since this note pretends to be a descriptive one, below I will try to use terms like "a verb frequently appears in the BECOME structure" in place of "an unaccusative verb", which also agrees with the lexical-decomposition flavor of my theoretical commitment better.

There is a strong correlation between the argument structure and the lexical aspect of VPs (Laws and Yuan 2010; Toratani 1997; Aljovic 2000). Specifically, a BECOME or CAUSE-BECOME VP tends to be telic, because it describes a transition of states and therefore the event denoted is bounded by definition.

Certain gradience exists in the distinction between the two transitive classes (Lin and Deen 2021; Huang 2007). The alternation, for example, can be seen in the distinction between (13) and (14): the aspect marker 正在 only coexists with the DO argument structure, which, in the intransitive case, doesn't allow the only argument to reside after the verbal complex (14); on the other hand, from the agent-after-verb linear oder in (13), we can tell 跑 is now in the BECOME structure. Thus one verb may appear in two structures. Also, the *bèi*-constructions are not available for some BECOME verbs, but not others (§ 5.3.7.2).

(13) 昨天 城北 那 座 监狱 跑 了 一 个 犯人
yesterday north.city DEM QNT prison run ASP one QNT inmate
'Yesterday, an inmate escaped (lit. 'ran') from the prison to the north of the city.'

(14) *城北那座监狱正在跑一个犯人

There exist several important variants of the VP valencies listed above. The most salient cases are the *bǎ*-construction (§ 5.3.6), the *bèi*-constructions (§ 5.3.5, § 5.3.7), and similar constructions that interrupt the standard SVO constituent order (TODO: ref, 让, etc.). Some constructions that have triggered endless debates (and even make some people claim that Mandarin has no argument structure), which include the EXPERIENCE construction (§ 5.3.4.2, commonly known as the 王冕死了父亲 structure), and several types of existential constructions TODO: 台上坐着主席团 Under in-depth scrutiny, all these constructions can be reduced into argument structure alternation and alternative ways to realize the verbal complex.

(15) 他们表扬了我

(16) 我被表扬了

(17) ??他们把我表扬了

我丢了手机、我把手机丢了 is 我 introduced by CAUSE?
Double-object VPs may be divided into two subclasses (Deng 2010, § 7.2):

1. Describing a telic event which roughly means to give something, with one agentive argument, one receiver and one theme (TODO: elaborate).

2. Describing a telic event with a meaning of obtaining something, with one agentive argument corresponding to the receiver, one argument similar to the TODO: experiencer? What's the role? that corresponds to the source, and one argument similar to the transitive object in the DO type that corresponds the the object being transferred.

The patientive argument and the TODO: numeral object like 他抢了我[一块钱] are not active for further processing; thus the VP can be further divided into two layers. TODO: 被 construction: what happens to the so-called passivized argument? Evidences suggest that the intransitive object is very internal, appearing in almost the same position with complement clause, etc. but why is it subject to 被 construction? TODO: for short 被-construction, maybe it's because short 被-construction is generated by directly attaching 被 to, say, [抢了一块钱]: 我被抢了一块钱 'lit. I suffer from one-dollar robbing' 李四被捕了 doesn't have a counterpart without 被: 捕 here may be regarded as a deponent verb. This also implies that 被 has already been grammaticalized and is no longer a lexical verb.

The telicity category described above interacts non-trivially with the aspectual system (§ 5.6).

5.3.2 The BE structure

5.3.2.1 Adjective predicator

One intriguing trait of Mandarin is a BE structure without a degree adverbial is considered problematic in a matrix clause, and yet is perfectly fine in a subordinated clause.

(18) ?他个子高

(19) 他个子比较高

(20) 他个子还算高

(21) 他个子高高的

(22) 他睡不下这张床，因为他个子高啊

5.3.3 The DO argument structure

5.3.3.1 The prototypical DO structure

5.3.3.2 The DO-AFFECT structure

The AFFECTEE argument is strongly patientive: unlike the EXPERIENCER argument that bears a similar meaning but appears with the BECOME structure (§ 5.3.4.2), a AFFECTEE argument can never appear in the subject.

(23) 他抢了我十块钱

(24) 我 抢 了 十 块 钱
1 rob ASP ten QNT money
I robbed ten dollars/*yuan*. (*I was robbed of ten dollars/*yuan*.)

(25) 我被他抢了十块钱

5.3.4 The unmarked VP with CAUSE-BECOME argument structure

5.3.4.1 Prototypical transitive and intransitive BECOME structures

The CAUSE-BECOME structure TODO

This structure – the intransitive verb frame of a S=O ambitransitive verb – is sometimes known as the **notional passive**, in which no explicit passive markers like 被 (§ 5.3.5) or 给 (§ 5.3.4.5) appear, but the meaning is passive (26, 27; compare the existence of the passive voice in the English translations and the absence of any passive marker in the Mandarin examples). If a verb can appear in the notional passive, then it has no problem appearing in the *bǎ*-construction (28, § 5.3.6.1). The long *bèi*-construction, however, may seem somehow strange (29, § 5.3.7.2).

(26) 茶 泡 好 了
tea soak well ASP
'Tea has been prepared. (lit. Tea has soaked well)'

(27) 我 已经 泡 好 茶 了
1 already soak well tea ASP
'I have already prepared tea. (lit. I already have soaked tea well.)'

(28) 我 把 茶 泡 好 了
1 BA tea soak well ASP
'I have already prepared tea.'

(29) ? 茶 被 我 泡 好 了
tea BEI 1 soak well ASP
'Tea is prepared by me.'

5.3.4.2 The EXPERIENCE-BECOME structure

(30) 王冕 死 了 父亲
(name) die ASP father
'Wang Mian's father died.'

(31) 才几个月，这家工厂就已经坏了三台机床了

> **Box 5.6: Alternative analysis of the EXPERIENCE construction**
>
> Deng (2010, § 212) analyzes the EXPERIENCE structure as a BECOME structure with the subject 王冕 being the argument introduced by BECOME, and the object 父亲 being an internal object attached to the verb 死. The main problem of this analysis is this goes against his previous analysis – which I accept in this note – that in, say, 某人死了, it's the NP 某人 denoting the person who dies that appears as the argument in the BECOME structure. Comparing this prototypical verb frame of 死 with (30), we find if Deng's analysis is true, then the same semantic argument is linked to two different syntactic positions, which, unless motivated by rather strong structural evidences, should not be accepted.

5.3.4.3 The CAUSE-EXPERIENCE structure

(32) 他送给了我一本书

This analysis is also supported by historical material.

(33) 王授我牛羊三千

(34) 我受牛羊三千

Note that since the receiver argument is not in a prototypical BECOME structure, it's impossible to recast (32) into a *bǎ*-construction by pretending that the receiver argument is in the BECOME structure (35). The theme argument is able to appear after 把 in the *bǎ*-construction (38). This however is likely linked to (39, 40), which is a standard ambitransitive CAUSE-BECOME structure, with the receiver argument 我 being an internal object or prepositional complement, depending on the nomenclature, and the preposition 给 is attached to the verbal complex (§ 5.2.4).

(35) *他把我送给了一本书

(36) *我被他送了一本书

(37) *我被

(38) 他把一本书送给了我

(39) [这 本 书]$_{\text{subject,BECOME}}$ [送 给 了]$_{\text{verbal complex}}$ [我]$_{\text{internal}}$
DEM QNT book give.gift give.toward ASP 1
'This book is given to me as a gift.'

(40) [他]$_{\text{subject, CAUSE}}$ 送 了 [这 本 书] [给 我]
3 give.gift ASP DEM QNT book give.towards 1
'He gave the book to me as a gift.'

There are several pieces of evidences that 给 is a preposition: it *has to* be deleted when the receiver argument governed by it is topicalized

(41) % 李四这人真的看人下菜碟。 [我]$_{\text{topic},i}$ [他]$_{\text{subject}}$ 送了一本书 $-_i$ ，王大爷他就啥也没送
'(colloquial).'

(42) *我他送给了一本书

5.3.4.4 The BE-BECOME alternation

A verb or adjective (TODO: what category?) that usually appear in a BE structure (43) can be semi-regularly (see below) inserted into a BECOME structure (44) or further, in a CAUSE-BECOME structure (45).

(43) 他 对 物理学 的 知识 一向 丰富
3 towards physics POSS knowledge always abundant
'His knowledge in physics is always abundant.'

(44) 经过 这 次 实地考察， 我们 对 这 片 山区 的
going.through DEM QNT real-place-investigation 1pl towards DEM QNT mountain-area DE
知识 更加 丰富 了
knowledge more abundant ASP
'After this field work, our knowledge of this mountain becomes more abundant.'

(45) 这 次 考察 丰富 了 我们 对 地质学 的 认识
DEM QNT investigation abundant ASP 1pl towards geology POSS KNOWING
'This explanation makes our knowledge of geology abundant.'

Note that if the predicator of a clause with the structure of (45) is usually found in a BE structure, then it is clearly to be interpreted as a CAUSE-BECOME structure, but this doesn't mean the CAUSE-BECOME structure is always available: (47) seems problematic, although its predicator, 红火, clearly is an adjective (TODO: ref) and is able to appear in a BE structure (46).

(46) 我们 家 的 日子 真是 越来越 红火 了
our home POSS live truly more.and.more booming ASP
'Our lives are increasingly improving.'

(47) ???新政策红火了我们的日子

BECOME-structures or CAUSE-BECOME structures derived from BE-structures are usually unable to appear in BA- or BEI-constructions (48, 49, 50). The reason for unavailability of *bèi*-constructions seems to be the same as the reason in § 5.3.7.2. TODO: why ba is not good?

(48) *我们的知识被丰富了

(49) *这场展览把我们的知识丰富了

(50) *我们的知识被这场展览丰富了

5.3.4.5 The DO-BECOME alternation

Not all verbs can appear in the notional passive construction. There exists another construction – the *gěi*-passive construction – that has similar meaning with the notional passive (i.e. the internal state of the subject somehow changes without the external cause – if any – being specified) and can be observed on its own in very colloquial and non-standard speech (51), sometimes for stylist and humor purposes.

(51) % 李四给杀了

The alternation between the notional passive and the *gěi*-construction is quite intriguing. It means the two are not free variants of the marker of the BECOME argument structure, but are in contrast distribution: 给 usually appears with verbs that prototypically appear in the DO structure (52, 53, 54). 给 also renders the whole predicate strongly telic. It seems to never appear without the aspectual marker 了. It's likely that 给 has already developed a distinct usage as a valency changing marker, which turns a DO verb into a BECOME one, while the notional passive construction directly applies to BECOME verb.

(52) a. ???我给喝醉了
b. 我喝醉了

(53) a. ??? 茶给泡好了
b. 茶泡好了

(54) a. % 我给灌醉了
b. *我灌醉了

给 also appears as a part of the *bǎ*-construction (55) and the long *bèi*-construction (56), although after removing 给, the instances of the *bǎ*- and *bèi*-constructions above are still grammatical. In *bǎ*- and *bèi*-constructions, the appearance of 给 seems to have no link with the DO-BECOME distinction (58; c.f. 52). The *gěi*-construction however is not compatible with the short *bèi*-construction (57). A reasonable guess, then, is that in the *bǎ*-construction and the long *bèi*-construction, 给 marks an embedded BECOME structure, regardless of whether a DO structure is embedded inside, while the short *bèi* construction is completely isolated from this pipeline.

(55) 他们把李四给杀了

(56) 李四被他们给杀了

(57) *李四被给杀了

(58) 这瓶酒把我给喝醉了

5.3.5 The short *bèi*-passive construction

Although 给 and 被 seem similar at the same glance, the former is able to appear in a ba-construction, while the latter is never able to do so.

(59) 李四被他们杀了

(60) 李四给他们杀了

(61) *他们把李四被杀了

5.3.6 The *bǎ*-construction

Box 5.7: The analysis of the dative construction

Deng (2010, p. 112) analyzes the dative construction as 我 CAUSE 张三 BECOME 一本书送张三. The problem is, this is a CAUSE-BECOME structure and therefore should be able to be alternatively realized as a *bǎ*-construction, with 张三 appearing directly after 把. This, however, doesn't seem to be the case: the correct *bǎ*-version is 我把一本书送给了张三, instead of 我把张三送了一本书.

5.3.6.1 *Bǎ*-construction and the CAUSE-BECOME structure

The *bǎ*-construction is an alternative way to realize the CAUSE-BECOME structure (§ 5.3.4.1), regardless of whether this CAUSE-BECOME structure comes from a DO structure (Deng 2010, pp. 98-99); this gives rise to some mismatch between the *bǎ*-construction and the long *bèi*-construction (§ 5.3.7.1). The BA-construction is not available when there is semantic obstruction to the CAUSE-BECOME reading.

我喜欢她
???我把她喜欢
??她被我喜欢
被不喜欢的人喜欢 – but this is definitely a "suffer" or "affectee" construction

Thus, we conclude 喜欢 is a DO verb, and this can be expected: to like someone (or in general, to have some thoughts about someone) doesn't change the inside state of the target. Thus, the BECOME argument structure is not available.

The S=O ambitransitive valency alternation in examples 62, 65, as well as the non-availability of the long *bèi*-construction (63, 66) and the state-changing semantics, means these examples contain a typical CAUSE-BECOME structure described in § 5.3.4.1. In both examples, *bǎ*-constructions are available (64, 67).

(62) a. 我喝醉了
b. ?这瓶酒喝醉了我

(63) ???我被这瓶酒喝醉了

(64) 这瓶酒把我喝醉了

(65) a. 我走得累死了
b. 这条路走得我累死了

(66) ???我被这条路走得累死了

(67) 这条路把我走得累死了

It's also possible that the

(68) *我害惨了

(69) 你这下把我害惨了

(70) 你这下害惨我了

(71) 我被你害惨了

5.3.6.2 Comparison with lexical causatives

The *bǎ*-construction is also referred to as the disposal construction or the causative construction, which involves the auxiliary 把, followed by a patientive argument and then a residue VP, with the direct object moved out; the subject is agentive (72). It should be noted that the *bǎ*-construction is not a causative construction that *blindly* takes any existing argument structure as the input. It seems what appears after 把 is never quite agentive: this is only possible with a lexical causative verb like 让 (73, 74). Thus, the *bǎ*-construction is unable to attach a CAUSER argument to any existing argument structure.

(72) [他们]$_{\text{subject}}$ [把 [李四]$_{\text{object}}$ 杀 了]$_{\text{predicate:}bǎ\text{-VP}}$
3pl BA (name) kill ASP
'They have killed Li Si.'

(73) * 他 把 我 去 爬山
3 BA 1 go climb.mountain
'He lets me climb mountains.'

(74) 他 让 我 去 爬山
3 let 1 go climb.mountain
'He lets me climb mountains.'

5.3.7 The long *bèi*-construction

5.3.7.1 Long *bèi*-construction without *bǎ* counterpart

However, the CAUSE-BECOME argument structure doesn't seem to be the only source of the long *bèi*-construction. There exist long *bèi*-constructions whose *bǎ*-counterparts are at best awkward and usually not acceptable.

(75) 李四被张三抢了一顶帽子

(76) 被不喜欢的人喜欢是很让人为难的一件事

(77) 我被他批评了一番，感觉非常不爽

(78) ??张三把李四抢了一顶帽子

(79) *他真是把自己的老婆喜欢啊

(80) ?他把我批评了一番

5.3.7.2 Alternation between the notional passive and the long *bèi*-passive

One interesting observation is the long *bèi*-construction is less acceptable for a verb that is able to appear in the notional passive construction (29, 81, 82). That's to say, if a verb can appear in the BECOME structure *on its own*, it's less likely to appear in the long *bèi*-passive. This might be motivated by semantic reasons: since both the long and the short *bèi*-constructions have the meaning of "being influenced by some external factors", a verb indicating an "automatic" internal state change has semantic incompatibility with these constructions. Indeed, when both situations seem plausible, both the notional passive and the long *bèi*-passive are available (83).

(81) a. 茶泡好了
b. ?茶被我泡好了

(82) a. *他杀了
b. 他被强盗给杀了

(83) a. 你的提案已经交到程序委员会了
b. 你的提案已经被交到程序委员会了

5.3.8 Attested variances

The above discussion is based on my own intuition. This by no means represents all Mandarin speakers. This section lists some notable variances of the patterns summarized above.

5.3.8.1 把, 被 replaced by 给

Sometimes, 把 in the *bǎ*-construction can be replaced by 给. It seems if the verb is BECOME (我笑麻了), then 给 has the same function as 把's, while if the verb is DO, 给 has the same function as BECOME.

(84) % 有人给我发了一封邮件，属实给我笑麻了

(85) % 这个情况给我整不会了

(86) % 李四给他们杀了

5.4 Semi-objects and verb ionization

There may be a numeral expression in the VP that gives the "quantity" of the event, which is called the **semi-object** (Zhu 2009, § 8.6). A semi-object may be a counting expression, a time expression, or a pure numerical expression (TODO: examples, and more concise terms). Their syntactic and semantic functions are closer to numeral attributives in NPs. They are called "objects " purely because they are within the VP and are NPs themselves; this note doesn't recognize them as objects; the term *semi-object* is only used to TODO: so is it really necessary to use the term?

> **Box 5.8: The coverage of the term *semi-object***
>
> Apart from the numeral attributives in VP discussed above, numerals appearing at the end of VPs are also sometimes called semi-objects (Deng 2010, p. 117). The syntactic function numerals in this latter case is closer to verbal complements (TODO: ref). And actually the term *semi-object* works better in the latter case! TODO: why are we sure that the two types of semi-objects have different syntactic positions?

5.4.1 Types of verb ionization structures

It's sometimes possible to split a verb and inject some clausal dependents into it (87, 88, 89). This phenomenon is known as **verb separation** or **verb ionization** Chao (1965, § 6.5.8). The injected clausal dependent is usually a resultative complement (87) or a semi-object (89, 90), but in marginal cases, an object personal pronoun is also possible beside a short semi-object (89).

(87) % [军　　完　　了　训]$_{VP}$　以后 才　　可以 去 请　　护照
military finish ASP training after only.after(TODO) can go ask.for passport
'(We) can only apply for a passport after finishing military training.' Chao (1965, § 6.5.8)

(88) % 还 [幽了他一默]$_{VP}$

(89) 这件事情你 [关什么心]$_{VP}$ 啊

(90) 我[学了两个小时的习]$_{VP}$

Whenever a semi-object is inserted, the resulting structure is uncontroversially an VP (88, 89, 90). Insertion of a resultative complement seems to be only available when the verb is intransitive, so the resulting structure is also an VP on its own.[1] It's usually possible to move the inserted constituent out (91, 92, 93), except in (88, TODO: general condition). When this is possible, the resulting structure has exactly the same meaning with the verb separation structure.

(91) 军训完了以后才可以去请护照

(92) 这件事你关心什么啊

(93) 我学习了两个小时

5.4.1.1 Motivation of verb ionization

The splitting of the verbs clearly origins by analogy with VPs containing morphosyntactic words. 军完了训 is apparently created by analogy with [[吃完了]$_{predicator:verb\ complex}$ [饭]$_{object:N}$]$_{VP}$. The motivation of this analogy seems to be prosody: splitting words into phrases is only observed in VPs, and VPs are subject to the prosodic constraint that the neither the verb nor the final complement can be too light. Splitting the verb may help to reduce the "weight" of the verb so the resulting utterance meets the prosodic constraint better.

The phenomenon of verb ionization looks just like infixing, in which a word is split even when it has no analyzable morphosyntactic inner structure. Here, however, this infixing operation creates an VP instead of a grammatical word. This justifies the assumption taken at the end of § 1.2.4 that there is no clear boundary between words and phrases and therefore syntax and morphology: It's possible for a phrase to undergo rearrangement without clear syntax motivation that usually happens within a word.

> **Box 5.9: The two faces of the term *morphology***
>
> When the term *morphology* is used, people use it to refer to two things: the first is what happens within a grammatical word, the second is phenomena that involve high localized operations that don't look like syntax but are also not prototypically phonological on the other hand.
>
> Verb ionization involves splitting a word, and is therefore of course morphological (in a highly non-trivial way) in the second sense. However, what is injected in after splitting the verb are phrasal dependents and the resulting morphosyntactic unit is a phrase, so verb ionization is syntactic and not morphological in the first sense. What I want to emphasize here is surface realization of a unit and its abstract constituency/dependency structure may be not always the same, although the latter strongly influences the former.

5.4.1.2 Comparison with similar constructions

It should be noted that some so-called verb ionization examples seem to be analyzable as trivially extending the object: compare 看书 and 看了三本书. Some verbs with verb-object inner structures contain an internal object that usually doesn't appear as a full NP, but that is not absolute: 洗了一个舒服的澡 and 一个舒服的澡对睡眠有好处. These constructions are excluded from the category of verb ionization, although as is shown above, they may historically motivate the emergence of verb ionization.

Other verbal items that are prosodic words seem to be extendable by both modification within the object and verb ionization. The prosodic word 念佛 may be extended into 念阿弥陀佛 (extending the object) as well as 念三声佛 (inserting a semi-object, verb ionization). This happens for 染发 as well: we have both 染了一头蓝发 (extending the object) and 染了一次头发. Since the semi-object can also

[1] And therefore whether 军完了训 is directly a VP or is first a verb complex and then a VP is not of much importance.

intervene between the verb and the direct object in uncontroversial VPs (94), it seems disyllabic (and therefore prosodic) verb-object structures have the same behaviors with longer verb-object structures.

(94) 老太太念了十多年的阿弥陀佛，却说不清阿弥陀佛是谁

5.5 Negation

Mandarin has two attested negators: 不 and 没. 不 is always used together with the habitual aspect: 他是回民，不吃猪肉. 没 is used together with a non-habitual aspect: 我那顿饭没吃猪肉.

When 不 is used together with a potential complement, we need to remove 得 and insert 不 in its position

我不是算不清楚账，但是那天不知怎么的就是没算清楚帐

5.6 The aspectual system

5.6.1 TAME categories

Mandarin lacks the category of tense – all tense information is expressed by time adverbs. Modality is marked similarly be adverbs or complement clause constructions. Yet there is a system marking the aspect (§ 5.6). (95) is an example.

(95) a. 我 去 过 上海 了
1 go GUO Shanghai SFP
'I have been in Shanghai.'

b. 我 去 了 上海 了
1 go LE Shanghai SFP
'I have gone to Shanghai.'

标语贴在墙上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

5.7 Prosodic constraint

All Mandarin VPs follow the following prosodic constraint: if the verbal complex is transitive, then the constituent after it should receive prosodic focus; otherwise the verbal complex should be able to receive prosodic focus. This means in a transitive clause, the verbal complex can't be too heavy, while in an intransitive clause (TODO: 把 construction), the verbal complex can't be too light.

It should be noted that this constraint doesn't apply to other type of syntactic constructions, even though a verb root appears. Thus, *[种植树]$_{\text{VP}}$ 'plant trees' is not grammatical because in this VP the verbal complex is heavier than the object, while it's the object that is supposed to receive prosodic focus, but [种植牙]$_{\text{compound noun}}$ is perfectly fine.

5.8 The short bei-construction

Although the only difference between the short bei-construction and the long bei-construction seems to be that the former lacks the semantic agent, the two constructions have important grammatical differences that seem to be not motivated by semantics.

5.9 The notional passive, the ba-construction, and the long bei-construction

把, 给, 被 appearing together: 给 is the BECOME verb; 李四给人杀了 = 李四 BECOME [人杀了 e], where 李四 moves out of the DoP.

(96) 李四给杀了
(97) 李四给他们杀了
(98) 他们把李四杀了
(99) 他们把李四给杀了
(100) *他们把李四被杀了
(101) 李四被他们杀了
(102) 李四被他们给杀了

On the other hand, long bei-constructions are probably from the CAUSE-BECOME structure, which can be demonstrated by the long-distance dependency relations observed in both the ba-construction and the long bei-construction (James Huang, Audrey Li, and Li 2013, § 4.2.1.5). 那块手表被李四用一个锤子砸烂了 Here the BECOME-structure would be ?那块手表用一个锤子给砸烂了. 李四 appears as a CAUSER, and if the derivation stops here, 把 is inserted, and we get 李四用一个锤子把那块手表给砸烂了. If, however, on top of the CAUSE-BECOME structure, we insert 被 and move 那块手表 out, 把 is no longer spelt out and we just get 那块手表被李四用一个锤子砸烂了. Note that in the above procedure, the most internal clausal dependents are completely inactive: we can replace 砸烂 by 砸成了一堆破铜烂铁, and everything is still completely grammatical.

> **Box 5.10: Valency increasing, or just different subcategorization frames?**
>
> One difference between my analysis here and the analysis in Deng (2010, p. 202) is that the latter assumes that the input to the gei-construction is a verb in the BECOME frame. This however is unable to explain why we get 他给人家杀了, in which the agent 人家 appears after 给. There are however definitely vagueness in whether the gei-construction can be applied to an existing DO argument structure.

5.10 The structure and position of the verbal complex

When ba-, gei- and bei-constructions are not available, the verbal complex always appears at the initial position of the core VP, that is, it appears immediately after the adverbials and after the negator if there is any. Thus, Mandarin is usually classified as an SVO language. Although the existence of the ba–construction casts doubt on this classification, TODO

5.11 There is no serial-verb construction or complex predicate

The term *serial-verb construction* refers to several different things in the literature. Sometimes it refers to the verbal complement system (Chen 2016), although in the topological literature there is no longer considered as a good usage (Schackow 2015, § 10.1, note that the V2s in Yakkha complex predication highly resembles Mandarin directional verbal complements in their formal aspects). In this sense, we of course have serial-verb constructions in Mandarin.

Chapter 6

Verb valency

After introducing all possible forms of the VP and its relation with the subject, I now give a thorough classification of verbs according to their semantics and valency.

There are two ways of valency changing in Mandarin. The first is via a coverb construction, as in the disposal constructions (§ **??**), TODO The second is *doing nothing* to the verb and relying on the unusual semantic roles of clausal complements to inform the listener about the valency changing, as in TODO: ref. Since there is no morphological marking, constructions of this type are often recognized as topic-comment structures, in which the "topic" – which is the subject under closer investigation – is said to be freely occupied by any semantic (and not necessarily syntactic) argument in the clause, though this claim can be falsified by detailed syntactic tests (§ 7.7.3).

6.1 Ditransitive: GIVING

6.2 Ditransitive: ROBBING

Chapter 7

Simple clauses

7.1 Overall remarks about the clause structure

A sentence can be divided into several clauses linked by clause linking constructions (chap. 10). This chapter is denoted to the simple clause, postponing details in subordination and clause linking to the next several chapters. Mandarin has rich topicalization phenomena, and thus a clause can be divided into one or more topics (if any) and a comment, the latter being the nucleus clause plus possible sentence-final particles. The comment – the nucleus clause – may further be divided into a subject (if any), a series of adverbials, the verbal complex, and post-verbal constituents, the most important types including object(s), the second part of a separable verb, certain directional complements, and purpose clauses.

> **Box 7.1: The term *clause***
>
> Some people, like Deng (2010, p. 140) as well as Dixon (2009), use the term *clause* for subject-predict constructions that don't receive complete marking of speech forces. (In generative terms, *clause* is for lower level CPs or even TPs.) So in this way, sentence-final particles shouldn't be discussed in this chapter because they are of course dependents in the sentence level. They may be discussed together with other sentence-level constructions like chap. 10. But this notion of clause certainly goes against the tradition in descriptive grammars. So the approach of this note is to acknowledge everything larger than TP as a clause, which may or may not be a sentence, and discuss its structure in this chapter, while "adjunctions" – or in other words, optional dependents – are discussed in, say, chap. 10, for the sake of convenience. The narrative order of this note is not the ideal "small unit – large unit" scheme, but the "simple large unit – complicated large unit" scheme. Needless to say, when it comes to clause combining, the problem of what the clause really is – with or without SFPs, for example – is still relevant, but it is not answered by saying "the construction takes a clause, not a sentence".

As is implied by my using the term *subject*, Mandarin is an typical accusative language. Clausal dependents are recognizable from the rather rigid constituent order: Mandarin is usually classified as having a SVO clausal constituent order, and the subject and the object(s) can be told from the positions in the clause (1, 2). Certain "SOV" orders can be obtained by invoking the disposal construction (§ ??), as in (3).

(1) 我 生病 了
1 get.sick SFP
'I got sick.'

(2) [我]$_{\text{subject}}$ 今天 去 看 [电影]$_{\text{object}}$ 了
1 today to watch movie SFP
'I went to watch a movie today.'

(3) [我]$_{\text{subject}}$ 今天 把 [一 个 碗]$_{\text{object}}$ 摔 碎 了
1 today BA one CL bowl break crack SFP
'I broke one bowl today.'

The normal tests of syntactic accusative alignment can be run on Mandarin (4).

(4) 陈 经理 昨天 没有 和 他的 客户 聊 过 。 他 生病 了 。
Chen (surname) manager yesterday NEG with 3sg-POSS client talk SFP 3sg get.sick SFP
'Manager Chen didn't talk with his client yesterday. He (Chen, not his client) got sick.'

7.2 Prosodic constraint

The main verb and one post-verbal constituent should form the last prosodic constituent in the clause (ignoring SFPs), and when there is no post-verbal constituents, the main verb receives the natural stress. This is actually a rather strong condition. Certain constituents – most functional words – are unable to accept stress at all. They may be freely merged into the closest prosodic constituents. Certain constituents – like NPs with definite references – are by default stressed. When the verb is the last lexical constituent (as in *他挥动棒子把我打), it should not be too short or otherwise it is unable to receive stress. When there are more than one post-verbal constituents, only one of them can receive stress. If two post-verbal constituents are both by default stressed, the sentence is again ruled out.

7.3 Types of nucleus clauses

> **Box 7.2: About the subject-predicate binary division**
>
> 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 in the topic-comment construction.

7.4 Negation

Like the case in standard English, there is no negative concord in Mandarin Chinese. There is, however, no uniform negation operator like the English *not*. Several negation operators and strategies are used frequently (§ 7.4). Verbs can be negated by 不 while nouns generally cannot, and this is a criterion to tell verbs from nouns. There is another negation operator 没, which has subtle differences in its meaning and syntactic properties compared with 不 (5, 6). On the other hand, the negative potential complement construction, i.e. the V不了 construction, isn't obtained by inserting a negator in the clause (7).

(5) a. 我 不 喜欢 吃 芹菜
1 NEG like eat celery
'I don't like eating celery.'

b. * 我没喜欢吃芹菜

(6) a. 我 不 吃 早饭
1 NEG eat breakfast
'I don't eat breakfast. (I usually don't, I don't want any today, etc.)'

b. 我 没 吃 早饭
1 NEG eat breakfast
'I didn't eat breakfast. (I may usually do, but somehow I didn't today.)'

(7) a. 我 做 [不 了]$_{\text{potential complement, negative}}$ 这 件 事
1 do NEG finish this CL affair
'I'm not able to do this.'

b. * 我 没有/并非/不 做 [得 了]$_{\text{potential complement, positive}}$ 这 件 事
1 NEG do DE finish this CL affair

7.5 Sentence final particles

7.6 Cleft construction

他是昨天才知道这个消息的他昨天才知道这个消息

他是王教授招进来的王教授把他招进来

Note that in the second example, the verbal complex 招进来 is too heavy, and the ba-construction is used to meet the prosodic constraint.

7.7 The topic-comment structure

I follow Shi (2000)'s approach and define a topic as an unmarked NP that has certain relations with a position in the clause after it and is indeed the topic in the information structure (i.e. some (probably already known) object to which new information is added). Constructions like 连…都…are not discussed in this section – they are to be found in TODO: ref.

7.7.1 Topicalization of possessor

(8a) and (8a) are a pair of sentences with and without topicalization of the possessor in the subject.

(8) a. [他]$_{\text{topic}}$ [[个子]$_{\text{subject}}$ 高高 的]$_{\text{comment}}$
3sg stature tall~TODO DE
'As for him, the stature is tall.'

b. [他 的 个子]$_{\text{subject}}$ 高高 的
3sg POSS stature tall~TODO DE
'His stature is tall.'

7.7.2 Topicalization of preposition objects

(9) 这件事你不能就麻烦他一个人

(10) 你不能[为了这件事]$_{\text{adverbial:PP}}$ 就麻烦他一个人

This is also a demonstration of the preposition status of 在 in this sentence (§ 3.6), because if it's a verb or an auxiliary verb, it will be hard to have its object topicalized and have it deleted at the same time, but deletion of the preposition in topicalization is well-attested cross-linguistically.

7.7.3 Origins of so-called "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 is just an NP which the comment is "about", 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.

7.7.3.1 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. Such cases are however rather unproductive. In (11) and (12), the orders of the constituents can never be changed. Nor is it possible to change a word or two in the bracketed "comments". A reasonable assumption is these bracketed "comments" are actually idioms, which are to be regarded as a single verbal element that can't be further analyzed. Thus, in (11) and (12), the so-called topic is an ordinary subject, and the so-called comment is a predicate.

(11) 他们[大鱼吃小鱼]（，厮杀成一片）

(12) 他们[你看看我我看看你]

7.7.3.2 Type 2: Quantificational adverbial looking like the inner subject

The second type of "dangling topic" is like (13). A topic-comment analysis of (13)

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

7.7.3.3 Type 3: Ellipsis leaving a subject and one predicate

Some people accept (14). 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 (14): (15) is a demonstration of the 幸亏……不然…… linking construction, and we also have its topicalized version (16). (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 (14) is clear: We can get it by omitting the second clause in the comment part of (16). 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.

(14) % 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).'

(15) [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.'

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

7.7.3.4 Type 4: Extraction from prepositional adverbials

(9) in § 7.7.2 is sometimes regarded as an instance of the dangling topic construction. However, as is shown in § 7.7.2, it may just be from topicalization of an NP in an adverbial, with the preposition (and/or the locative particle) removed.

7.7.3.5 Type 5: Nominal predicate

(17) 这种青菜一斤三十块钱

7.7.3.6 Type 6: Locational adverbial mistaken for the subject

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

7.7.3.7 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 structure. 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 7.3: 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

Chapter 8

Relative clause constructions

Chapter 9

Complement clause constructions

Box 9.1: Non-existence of finite-nonfinite distinction in Mandarin

Cross-linguistically, we find a finite-nonfinite distinction in subordination. This distinction is arguably absent in Mandarin, even after detailed syntactic tests (Hu, Pan, and Xu 2001).

Chapter 10

Clause linking

Mandarin Chinese has usual clause linker devices (chap. 10), as well as complement clauses (§ 9) and relative clauses (TODO: ref). TODO: what else?

Chapter 11

Summary and discussion

11.1 A typological summary

11.2 About the theoretical framework

Many linguists call for a framework-less and completely open-minded approach towards syntactic analysis. It's true (almost tautologically) that a grammar of a language should be organized according to the object language's own features. Still, there exists the problem about *how much* variation a linguist should expect when working with a totally unfamiliar language.

I'm not in the position to discuss whether the generative community is on the right track or whether the tendency to work on complex clause structures hinders the race against time to capture endangered languages. What I do know – which is illustrated in the discussion above – is that kind of generativism I adopted in § 1.2.4 does seem to work for Mandarin Chinese, despite the latter didn't play a strong role in the historical development of this framework. We see the lexical-decomposition analysis and the VP-shell theory neatly capture the structure of Mandarin VP. We see the category of clause can and should be further divided into subcategories with various internal complexities, and the sizes of these subcategories can be placed on a monotonically increasing hierarchy, which agrees well with the *v*P-TP-CP hierarchy. We see that on one hand, we can recognize grammatical words in Mandarin, and on the other hand, grammatical words are just mini-phrases. And, most importantly, we have shown that most – if not all – mysterious traits of Mandarin have ingredients already well-known in other languages. This is by no means a denial of linguistic diversity: on the contrary, that languages have choices over how to recombine these ingredients helps us understand *why* there is linguistic diversity at all.

11.2.1 Necessity of large-volume grammars

The next question is, since all natural languages have comparable complexity, whether the same thing should be done for less known languages.

11.2.2 About how to teach Mandarin

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