Mandarin[1]
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1. Introduction

Mandarin belongs to the Sinitic language family, which in turn is part of the Sino-Tibetan language family, though there is some debate on the question how close the relation between Sinitic and the other Sino-Tibetan languages (the Tibeto-Burman languages) is (Norman 1988; Handel 2008). Mandarin is spoken, as a first language, in a large area, a broad band going from the North-East to the South-West of China. The language variation in this area, although it certainly exists, is smaller than one would expect on the basis of the huge area it is spoken in. Ramsey (1987) hypothesizes that this is partly due to the fact that very large Mandarin speaking areas (e.g., the three provinces in the North-East and Sichuan) were populated by Mandarin speakers only recently (in the last 200 years or so). This paper is about the northern variety of Mandarin.

   Other members of the Sinitic family include Cantonese, Min (Hokkien), Xiang, Gan and Wu, which are spoken in the South-East. They differ from Mandarin to a large extent in lexicon, phonology, morphology and syntax (Norman 1988; Chappell 2001).

   Mandarin (more specifically, northern Mandarin) is the official language of China. It is also the official language (or one of the official languages) in other places, such as Taiwan and Singapore (Chen 1999). In total, Mandarin is spoken by more than 1.3 billion people as their first or second language.

   Like all other Sinitic languages, Mandarin is a tone language. It has four tones: high level, high rising, low (or low dipping: it has a rise before pauses) and falling. Like phonemes, tone is distinctive; the tones are occasionally referred to as "tonemes".

   Mandarin is often referred to as an analytic language. Sagart (2001: 123) puts it this way:

> "Modern Standard Chinese is a textbook example of an isolating language with little morphology, in which word order is the principal means through which grammatical meaning is expressed. Although a few suffixes are present (notably aspect markers and noun suffixes), these are often etymologically transparent and do not appear to be very ancient."

Although this is true to some extent, the picture this evokes of a language with a rigid word order without much morphology is not correct. First of all, as we will see below, due to such phenomena as topicalization, word order is actually quite free. The fact that we find *pro*-drop (the arguments of the sentence can remain covert) enhances the image of a language that relies on much more than just word order. Topicalization will be discussed in section 4 below; here is an example of *pro*-drop (see also section 3.1.3 above; see J.Huang 1984 for restrictions on object *pro*-drop).

(1)   Q: *Zhāng Sān   kànjiàn-le Lǐ Sì   ma?*
            Zhang San   see-PERF   Li Si   Q-PRT

'Did Zhang San see Li Si?'
A: *kànjiàn-le.*
    see-PERF
    '(He) saw (him).'

Secondly, Mandarin actually has a lot of morphology. Although it does not have agreement and tense morphology, it has numerous suffixes, especially in the nominal and verbal domains (but Sagart is right that many of these are "etymologically transparent"). It also features a morphological process which is actually quite *un*-analytic by nature, viz., reduplication. We find reduplication in all domains, though mostly with verbs and adjectives, with different effects. While reduplication of adjectives leads to intensification, reduplication of verbs yields an effect of de-intensification. In verb reduplication, we optionally insert an element *yi*:

(2)   a. *gāoxìng* 'happy'
          gāogāoxìngxìng 'very happy'
      b. *cháng* 'taste'
          cháng(yi)cháng 'taste a bit'

In this article, we discuss the syntax of Mandarin in three sections, concentrating separately on issues in the nominal domain, the verbal domain and the sentence.

2. The nominal domain

In this section we discuss several aspects of the nominal domain. We will first investigate what different forms the nominal phrase can take, after which we look at several of the constituting parts separately, including the classifier and the modifiers. Besides, we will look at the referential properties the different nominal phrases can have. Finally, we discuss issues related to mass and count.

2.1. Constituents and constituent order

A Mandarin noun phrase may contain the following elements: a demonstrative, a numeral, a classifier, modifiers and the head N itself. If a phrase contains all these elements, the base order is the following:

(3)   Dem Nume Cl Mod (*de*) N

Demonstratives always precede the numeral, the classifier and/or the N, the numeral always precedes the classifier and the classifier always precedes the N.[2] Modifiers may (in some cases must) be followed by the element *de* (etymologically different from the two *de*s used in the VP, see section 3), which we will discuss below (see also Tang 1990). The only deviation from this base order is that modifiers can also precede the demonstrative or the numeral:

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[2] Except in certain cases, such as lists, as in: wǒ mǎi-le shū yī-běn [I buy-PERF book three-CL], for which see Tang (1996).

(4)   Mod (*de*) (Dem) Nume Cl N

The effects of this variation in word order will be discussed briefly below.

    Aside from the complete form in (3), many other forms are possible. For a start, N may appear bare. It may also be preceded by just the classifier. In Mandarin, the distribution of such [Cl N] phrases is limited and there are good reasons to assume that a covert numeral is present. It is either covert for phonological reasons (it gets suppressed in fast speech), or for syntactic reasons (the numeral can be left empty in so-called "governed" positions) (see Cheng and Sybesma 1999). Whether there is always a numeral following the demonstrative is not clear. The demonstratives each come in two forms, as given in (5).

(5)   a.   *zhè* 'this', *nà* 'that'
        b.   *zhèi* 'this', *nèi* 'that'

Of these, the forms in (5b) have presumably incorporated the numeral *yī* 'one'. This fact does not seem to have any repercussions for the distribution within the bigger noun phrase, however. Both forms can be combined directly with the classifier, and both forms can also be followed by other numerals:

(6)   a.   *zhè(i) běn shū*
              this   CL book
              'this book'
        b.   *zhè(i) sān běn shū*
              this   three CL book
              'these three books'

The only distributional difference (in those varieties that have both forms) is that the forms in (5b) cannot constitute a phrase by themselves:

(7)   a.   *zhè/*zhèi   shì shénme*?
              this   be what
              'What is this?'
        b.   *nà/*nèi   bù hǎo*.
              that   not good
              'That is not good.'

To return to the demonstrative within the noun phrase, in spoken Mandarin, the demonstrative is often attached to the noun directly (see for instance Wáng 2005). We get phrases such as:

(8)   *zhè shū bù hǎo-kàn*.
              this book not good-to.read
              'This book is not good.'

Significantly, the sentence in (8) has one more reading: 'these books are not good', with a plural interpretation of the subject. We return to this point in the following sub-section.

    Next, Tao (2006) discusses cases (previously discussed in Dù 1993 and Jìng 1995) with a numeral, but without a classifier ((9a) from Dù, (9b) adapted from Tao):

(9) a. *mǎlù-shang   lái-le   yí   tuōlājī*
          road-top   come-PERF   one   tractor
          'On the road came a tractor'
    b. *nèi-shí   yǒu   yí   rén…*
          that-time have one person
          'That time, there was someone …'

As Tao argues, the classifier may not be physically there, but its presence is reflected in the tone of the numeral. The citation tone of *yī* 'one' is high level. Before rising tones, it is realized as a falling tone, and before the level, falling and dipping tones, it becomes a rising tone.[3] The rising tone on *yí* in (9), unexpected if we consider the surface data only, can easily be explained if we assume, as Tao does, that *yī* 'one' is, or, in any case, originally was, followed by the classifier *ge*, which has a falling tone (despite its being so weak that we do not mark it in our transcriptions, as is general practice). Due to frequency effects, the sound of the classifier itself eroded, but the sandhi effects lasted.

    Finally, N itself may also be elided. We find noun ellipsis licensed in two environments, following the modification marker *de* and following the classifier (as was observed by Arsenijevic and Sio 2007 for Cantonese; see also Shi and Li 2002):

(10) a. *tā gāngcái chī-le   yī-ge   píngguǒ, nǐ yě   yīnggāi chī yī-ge.*
          3S just-now eat-PERF one-CL apple,   2S also ought   eat one-CL
          'He just ate an apple, you should also eat one.'
    b. *tā bù   xǐhuān nèi-běn shū,   tā xǐhuān zhèi-běn.*
          3S NEG like   that-CL book, 3S like   this-CL
          'He does not like that book, he likes this one.'

(11) a. *wǒ xǐhuān hóng-sè de xié,   tā xǐhuān huáng-sè   de.*
          1S like   red-color DE shoe, 3S like   yellow-color DE
          'I like red shoes, he likes yellow ones.'
    b. *tā zuótiān   mǎi-le   yī-jiàn xīn de máoyī, wǒ mǎi-le   yī-jiàn jiù de.*
          3S yesterday buy-PERF one-CL new DE sweater, 1S buy-PERF one-CL old DE
          'He bought a new sweater yesterday, I bought an old one.'

In sum, noun ellipsis cases and modifiers aside, the Mandarin noun phrase can have the following forms:

(12) a. Dem Nume Cl N
    b. Dem ($\varnothing_{one}$??) Cl N
    c. Dem N
    d. Nume Cl N
    e. $\varnothing_{one}$ Cl N
    f. N
    g. *yí* $\varnothing_{ge}$ N

As noted, the only form that raises a question is the one in (12b): is there a covert number 'one' in between the classifier and the N? Whereas for (12e) and (12g) we have enough evidence to assume that we have a covert *yī* and an underlying *ge*

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[3] We do not systematically mark tone sandhi in the transcriptions in this paper.

respectively, we do not seem to have any evidence for any empty element in (12b). We return to this question shortly.

2.2. The classifier

In Mandarin, the classifier has a grammatical function as well as a more lexical aspect. To start with the former, disregarding our discussion on the different forms of the demonstrative, we can say that in Mandarin the distribution of the classifier is bound to the presence of a numeral (whether the numeral is overt or not): we only use the classifier when we count. Or, phrased from another perspective, when we do not count, we do not need the classifier.

(13) *wǒ kàn-le   liǎng (*běn) shū.*
       1S read-PERF two   CL   book
       'I read two books.'

The classifier refers to the unit of counting. Despite that, classifiers are not the same as measure words, such as "cupful" or "kilo", which exist in all languages. The difference is that whereas measure words create a unit of counting, classifiers simply name the unit that is already part of the semantic denotation of the noun (Croft 1994; Cheng and Sybesma 1998a). We briefly return to this in section 4.5 below.

    There is a relation between the classifier and number. We saw in (8) that an N not accompanied by a classifier is unspecified for number; (14) is another example, of a bare N. Depending on the context, (14) can contain a reference to a single book, or a plurality of books:

(14) *wǒ bǎ shū   fàng-zài zhuōzi-shàng le.*
       1S BA book put-at   table-top   SFP
       'I put the book(s) on the table.'

When we add a classifier to (8), the number ambiguity disappears:

(15) *zhè běn shū   bù   hǎo-kàn.*
       this CL   book not good-to.read
       ONLY: 'This book is not good.'

Although this may be ascribed to a covert numeral 'one' between the demonstrative and the classifier, we know from other varieties of Chinese that the classifier alone signals singularity, so there is no reason to assume an empty 'one'. Mandarin numerals must be looked upon as multipliers: they denote multiplications of singularities (three times one book, instead of three books).

    The singular classifier has a counterpart for unspecified plural, *xiē*:

(16) *zhè xiē   shū   bù   hǎo-kàn.*
       this CL^PL book not good-to.read
       ONLY: 'These books are not good.'

The element *xiē* can only co-occur with demonstratives and the numeral *yī* (see Iljic 1994; see also Y.-H.Li 1998). With *yī* it is translatable as 'some' or 'a few':

(17)   *Zhāng Sān mǎi-le   yī-xiē   shū.*
         Zhang San buy-PERF one- CL^PL book
         'Zhang San bought a few books.'

Let us now turn to the lexical aspect of the classifier – the very reason why they are called "classifier". There are quite a number of different classifiers in Mandarin, each of which is used for a group of words, which fall in the same category from one perspective or another. In Mandarin, the classification is primarily based on criteria formulated in reference to shape or function. As such, we have *tiáo* for long, thin, flexible things such as snakes and ropes; *zhī* for long, thin, stiff objects such as rifles and pens; *zhāng* for flat rectangular objects, such as cards and tables; *lì* for small round things such as seeds and marbles; *kē* for (slightly) bigger round things such as eggs, melons and stars; *bǎ* for things one can grab with one hand, such as chairs; *liǎng* for vehicles; *zhī* (another one) for small animals; *tóu* for cattle and sheep; etc. (see for instance, Chao 1968; Y.Shi 1996; Zhang 2007).

For abstract notions and ideas, as well as people we use *ge*, which originally refers to a bamboo stake. The classifier *ge* is used with so many different categories of things, that it is sometimes called a "general" classifier. Another reason for calling it that is that it is some kind of default. Yet another reason is that often, in conversations, the first mention of an object is accompanied by the "correct" classifier, while the subsequent references to it contain *ge* (Erbaugh 2002; Loke 1994; H.Liu 2003; Myers 2000).

The grammatical function of the classifier is quite robust in Chinese grammar. This is clear from what we observe in language acquisition and in language loss. As Erbaugh (2002) has shown, children acquire the use of the classifier very early. In the beginning, they only have one, *ge*. Even with words that do not go with *ge* in adult Mandarin, children use *ge*. The same is true for some aphasic patients (Ahrens 1994; Tzeng, Chen and Hung 1991): they often fall back on *ge* when they lack access to the right classifier. In other words, these patients, like the children, rather make a lexical mistake than a grammatical one.

2.3. Modification

Modifiers and nouns are separated from one another by the element *de*, regardless of what the nature of the modifier is. Here are some examples.

(18)   a. *dà (de) yú*   simple adjective
           big DE fish
           'big fish'
       b. *fēicháng   dà de yú*   complex adjective
           extraordinarily big DE fish
           'very big fish'
       c. *Zhāng Sān de yīfu*   possessor
           Zhang San DE clothes
           'Zhang San's clothes'
       d. *méi mǎi-guo shū   de rén*   R(elative) C(lause)
           NEG buy-EXP book DE person
           'people who have never bought a book'

    e.   *tā chàng gē   de shēngyīn*   gapless RC
         3S sing   song DE voice
         'the voice with which he sings'
    f.   *duì   érzi de tàidu*   PP
         regarding son DE attitude
         'the attitude towards his son'
    g.   *yǐqián de zǒngtǒng*   non-predicative modifier
         former DE president
         'the former president'

In all these cases, except (18a) which combines two heads, *de* is obligatory. Even in (18a), *de* is not truly optional in the sense that omission or insertion correlates with a change in meaning. Consider the following minimal pairs:

(19) a. *zāng shuǐ*   *dà yú*   *cōngmíng rén*
        dirty water   big fish   intelligent person
        'dirty water'   'big fish'   'intelligent person'
      b. *zāng de shuǐ*   *dà de yú*   *cōngmíng de rén*
        dirty DE water   big DE fish   intelligent DE person
        'dirty water'   'big fish'   'intelligent person'

In Paul's (2005) terms, the adjectives in (19a) (without *de*) describe a "defining property" whereas the ones in (19b) describe an "accessory property". Thus, with *dà yú* 'big fish', for instance, we have a fish that is naturally big, like a shark, whereas with *dà de yú* 'big fish' we describe a fish that happens to be big – like a big herring.

    This only applies to the combination of two heads. Certain modifiers, in particular possessors and relative clauses, can appear without *de* in front of the demonstrative without the effect of changing from "accessory" to "defining".

    With respect to the placement of relative clauses, Chao (1968) claims that relative clauses preceding the demonstrative are restrictive, while the ones between the demonstrative and the noun are non-restrictive. There has been a lot of discussion on this claim, not only addressing the question whether it is correct, but also the question whether Mandarin has non-restrictive relative clauses at all (see J.Huang 1982b; Tsai 1994a; Del Gobbo 2001). Lin (2004) shows convincingly, that non-restrictive relatives do exist (if the head is a pronoun or a proper name; see also Del Gobbo 2010 for detailed discussion) and that relative clauses in both positions can be both restrictive and non-restrictive. The difference between the pre-demonstrative and the post-demonstrative relatives seems to be merely a matter of contrastiveness: the former is contrastive, while the latter is not (Lin 2004; Cheng 1998; Sio 2006).

    A final question we need to address is what the status of the modification marker, *de*, is (see Paris 1979). It has been analysed as a C^0 (Cheng 1986a), as a D^0 (Simpson 2003, à la Kayne 1994), as the head of a ModP (Rubin 2003), as a marker of predicate inversion having taken place (Den Dikken and Singhapreecha 2004), as a marker of the division of the NP in two syntactico-semantic domains (Paul 2005), as a semantic type-lowerer (S.Huang 2006) — to mention just some of the more influential or relatively recent proposals. Very recently, Arsenijevic and Sio (2007) and Cheng and Sybesma (2009) have argued that *de* (and its Cantonese counterpart *ge3*), is a type of classifier. The idea behind this is that, just like when you count, you need the unit for counting (Sybesma 2009), in modification you also need to specify the unit which is the object of modification.

2.4. Referential properties

Noun phrases can have different referential properties. They can be definite, indefinite (in two different ways: specific and non-specific), generic and non-referential. How does a language like Mandarin, which lacks definite and indefinite articles express these notions? In this section we match these referential options with the different forms which noun phrases in Mandarin can take, which were listed in (12). The list in (12) can be summarized as in (20). Judging superficially, we have three different forms: (a) with the demonstrative; (b) without the demonstrative but with numeral and classifier; and (c) bare Ns.

(20) a. Dem ($\emptyset_{one}$?/Nume Cl) N (= (12a,b,c))
     b. $\emptyset_{one}$/Nume Cl N (= (12d,e); this one includes (12g))
     c. N (= (12f))

Let's start with definiteness. Both the forms in (20a) and those in (20c) are used to refer to enitities which have been introduced into the conversational space and are known to both hearer and speaker. With respect to (20a), the distal demonstrative is used more generally than the proximal. It is occasionally claimed that the distal demonstrative, *nà* or *nèi*, is developing into a definite article.

    There are reasons, however, to think that the bare N is the purer definite form of the two and that the (20a) forms will always carry some of the contrastive aspects inherent to demonstratives; it seems that phrases with a demonstrative are just very specific indefinites (Sybesma and Sio 2008). These reasons have to do with the choice between the two forms in two different contexts. One is in the reference to unique objects, such as the sun and the queen, where the use of the bare N is much more natural than the use of a demonstrative (to some native speakers consulted, the latter form is not acceptable). The second contrast has to do with the translation of the second line in the following scenario:

(21) a. *A man and a woman came into a bar.*
     b. *The man was already drunk.*

Although both (22a) and (22b) are acceptable as renderings of (21b), the former is considered the better option by the majority of speakers consulted. There is, by the way, also a group of speakers who prefer (22c).

(22) a. *nánde yǐjīng   hē-zuì-le.*
       man   already drink-drunk-PERF
     b. *nèi-ge   nánde yǐjīng   hē-zuì-le.*
       DEM-CL man   already drink-drunk-PERF
     a. *nèi   nánde yǐjīng   hē-zuì-le.*
       DEM man   already drink-drunk-PERF

As to generics, Mandarin uses bare N only.[4] Here is one example:

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[4] Examples with [numeral-classifier-noun] having a "generic" reading, as claimed in Wu and Bodomo (2009), are actually cases where an indefinite noun phrase is bound under a generic operator (see Cheng and Sybesma to appear for more detailed discussion).

(23)   *lǎoshǔ shì bǔrǔ-dòngwu.*
         mouse be mammal
         'Mice are mammals.'

Turning to indefinites, we observe that the forms in (20b), with a (covert or overt) numeral are always indefinite.[5] The bare N in (20c) sometimes also expresses indefiniteness. All these forms can be non-specific indefinite and only the forms with an overt numeral can be specific indefinite. This is clear from the occurrence of indefinites following *bǎ* in the *bǎ*-construction (see section 3 below). Nouns in that position are "strong", that is, definite or specific indefinite,[6] and nominal phrases without an overt numeral are blocked from this position:

(24)   * *qǐng   bǎ zhī bǐ   jiè gěi wǒ yòng, hǎo ma*?
           please BA CL pen loan to 1S use   good SFP
           'Please loan me a pen (any pen) for a moment, okay?'

It has been claimed for *yí ø_{cl}, yī ge* as well as *ø 'one' ge* that they are developing into indefinite articles (e.g. Chen 2003; Tao 2006).

   Finally, only bare N can have a non-referential interpretation. Nouns are non-referential if they do not set up a referential frame (De Swart and Zwarts 2009). An example in English is: 'John plays the piano. #It is a very old one.' This sentence is anomalous because *the piano* in the first sentence is non-referential in the sense defined.

   In Mandarin bare N is often non-referential. We will see examples when we discuss the so-called dummy objects in section 3. Here is another example:

(25)   *Zhāng Sān mǎi shū   qù le.   #dōu hěn hòu.*
         Zhang San buy book go PERF   all very thick
         'Zhang San went to buy books. They're all very big.'

Matching form and referential properties, we see that forms with a demonstrative are always definite (or, more precisely, very specific; see the discussion above), forms without the demonstrative but with a numeral and classifier are all indefinite and that bare Ns can be definite, generic, indefinite and non-referential. The question is what the underlying structure of all these different forms is. Works such as Cheng and Sybesma (1999, 2009), Sio (2006) and Sybesma and Sio (2008) have led to the idea that the Chinese noun phrase involves at least the following three functional layers on top of the lexical NP. The lowest of these three is the layer which marks the phrase as definite. Comparison with other varieties of Chinese led Cheng and Sybesma to associate this layer with the projection headed by the classifier, ClP. On top of this layer, we find the numeral phrase, NumeP, which undoes the definiteness and marks the phrase as indefinite. The third layer is associated with the demonstrative; it is called "specificity phrase" in Sio (2006): it marks the phrase as specific indefinite.

   The idea is that it is the underlying structure which determines the referential properties of the phrase. Thus, a superficially bare N which is definite, is a ClP, a superficially bare N which is indefinite is a NumeP. A specific indefinite NumeP would also involve the SpecP.

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[5] See M.Wu (2006) for special cases where numeral phrases are purported to have a definite reading.
[6] Sybesma (1992) and references cited there. This claim is challenged in Yang (2007).

2.5. Matters of count and mass

The fact that one cannot count in Mandarin without the intervention of a classifier has inspired many to claim that Chinese nouns are all mass nouns and that the classifier turns them into count nouns. This claim is questionable for two reasons.

First, Cheng and Sybesma (1998a) show that measure words which (as we mentioned above) create a unit of measurement that is not naturally there, differ in several syntactic respects from classifiers, which simply name the unit of counting that is part of the semantic denotation of the noun. One such respect is the fact that, unlike (most) classifiers, measure words can be modified by adjectives such as *dà* 'big' and *xiǎo* 'small' (see (26)); the other is that measure words can be followed by the modification marker *de*, whereas this is not possible for (most) classifiers (as illustrated in (27)).[7]

(26) a. *yī dà hé qiǎokēli*
          one big box chocolate
          'one big box(full) of chocolates'
       b.* *yī dà ge nánzǐhàn*
          one big CL bloke

(27) a. *yī hé de qiǎokēli*
          one box DE chocolate
          'one box(full) of chocolates'
       b.* *yī ge de nánzǐhàn*
          one CL DE bloke

Cheng and Sybesma (1998a) conclude that the difference between mass and count nouns exists in Chinese, and that it is reflected at the level of the classifier.

Secondly, Cheng, Doetjes and Sybesma (2008) observe that bare nouns in Mandarin do not get the mass interpretation which is expected under the assumption that all nouns in Mandarin are mass and are only turned into count by the classifier. Whereas in English, bare nouns can easily shift to a mass reading, as in (28a) and (29a), we rarely get such reading in Chinese.

(28) *after the explosion,*
       a. *There was dog all over the wall.*
       b. *qiáng-shàng quán shì gǒu-*(ròu)*
          wall-top   all   be dog-flesh

(29) a. *He likes to eat elephant.*
       b. *tā xǐhuān chī dàxiàng-*(ròu).*
          3s like   eat elephant-flesh

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[7] The former claim is challenged by X.Li (2009). Hsieh (2008) examines the conditions in which *de* can follow a sortal classifier, and concludes that in such cases, either the quantity is approximate, or there is emphasis or contrastive focus on the classifier.

In both (28b) and (29b) we see that on its own the bare noun cannot be interpreted as a mass; we need to add the noun *ròu* 'flesh, meat' to get the intended meaning.[8]

   We conclude that Chinese nouns do not all start out as mass nouns.

3. The verbal domain

In this section, we discuss issues related to the verbal domain. We do so in three subsections: 3.1 is loosely organized around the question how the (Vendlerian) verb classes are instantiated in Mandarin (Aktionsart); 3.2 deals with a number of intransitive structures, and 3.3 is about tense and (viewpoint) aspect.

3.1. States, accomplishments and activities

3.1.1. The expression of states and related issues: A, P and nominal predicates

This section introduces the characteristics of how the different verb classes in Mandarin are instantiated, basically an overview from an Aktionsart point of view. Though the focus will be on accomplishments and activities, we start off from a brief discussion on issues related to the expression of states.

   The first thing to mention is that according to some researchers, the category of "adjective" does not exist in Mandarin (McCawley 1992). There is a group of predicative elements, generally called "stative verbs" in the literature in English, which by and large cover the semantic domain covered by adjectives in most Indo-European languages; the Chinese term is *xíngróngcí* or 'descriptive word'. These stative verbs differ from Indo-European adjectives in not needing a copular verb when they function as the main predicate of a sentence. To express a stative situation, they do, however, need something else, viz., a degree marker.

(30)   a.   *Zhāng Sān gāo/cōngmíng.*
            Zhang San tall/intelligent
            'Zhang San is taller/more intelligent (than someone else in the context).'
            NOT: 'Zhang San is tall.'
      b.   *Zhāng Sān hěn gāo/cōngmíng.*
            Zhang San very tall/intelligent
            'Zhang San is tall/intelligent.'

As these examples show, when used bare, Mandarin adjectives seem to have a comparative interpretation; the sentence in (30a) is only felicitous in a context in which, for instance, it was just asked who of the two children was taller or more intelligent. To make a stative, that is, non-comparative, claim, we need an additional element, viz., a degree marker. In (30b) this is the non-emphatic *hěn* 'very' but other degree modifiers can also be used. It is unclear why stative verbs need this additional element when used predicatively. S.Huang (2006) proposes that these elements

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[8] We use the lexical item *dà-xiàng* 'elephant' here because elephant meat is not a typical or common culinary item. Some lexical items such as *jī* 'chicken' are more easily switched to a mass reading; cf. Chierchia (2010). Compare *sān-pán jī* /three-dish chicken/ with ?**sān-pán niú* /three-dish cow/. The latter is not felicitous. See Cheng, Doetjes and Sybesma (2008) for a discussion of the trigger of coerced readings.

function as "type lifters"; by "lifting" the N-type stative verbs from <e> to <e,t>, they enable them to function as predicates. Grano (to appear), approaching the problem from how Mandarin expresses comparative as well as positive semantics, argues that the appearance of *hěn* 'very' is inserted to satisfy a requirement connecting T and the verb. For one other proposal, C.Liu (2010).

Aside from these "stative verbs", there are other verbs expressing states, such as *xǐhuān* 'like', *zhīdao* 'know (information)' and *rènshi* 'know (people)', only some of which (an example is *xǐhuān* 'like'), can be modified by degree modifiers.

Nouns functioning as predicates are generally accompanied by the copula *shì*. Nominal predicates can be bare Ns, but can also be preceded by (*yí*)-*ge* /(one-)CL/ 'one, a' (with slight meaning differences between nominal predicates with and those without):

(31)   *Zhāng Sān shì ((yí)-ge) tiāncái.*
         Zhang San be   one-CL genius
         'Zhang San is a genius.'

The category P is also not unproblematic. First, it is not clear how many members the category has, if it exists at all. Although there are a small number of elements that only function prepositionally, most counterparts of prepositions in Indo-European languages can probably be considered as verbs that can function as the main or as a subordinate predicate in a sentence. Here are some examples, with *zài* 'be at/at', *gěi* 'give/to, for' and *yòng* 'use/with':

(32) a. *tā bù zài   jiā.*
        3S not be.at home
        'She is not at home.'
    a.' *wǒmen píngcháng zài jiā   chī fàn.*
        1P   normally   at   home eat rice
        'We normally eat at home.'
    b. *tā méi yǒu gěi wǒ nàme duō.*
        3S not have give 1S so   much
        'He did not give me that much.'
    b.' *tā gěi nǐ mǎi-le   sān-běn shū.*
        3S for 2S buy-PERF three-CL book
        'She bought you three books.'
    c. *wǒ bù xiǎng yòng tā-de   yǔfǎ-shū.*
        1S not want use 3S-SUB grammar-book
        'I don't want to use his grammar.'
    c.' *wǒmen píngcháng yòng kuàizi   chī fàn.*
        1P   normally   with chopstick eat rice
        'We normally eat with chopsticks.'

In (32), we see the same element as a main predicate (32a,b,c) and in a subordinate function (the primed counterparts). How the primed sentences should be analysed is controversial. Some see these examples as evidence for the idea that Mandarin features serial verb constructions (Li and Thompson 1981), but others, such as Paul (2008), have reasons to doubt that there is any substance to this idea at all.

3.1.2. Accomplishments

Mandarin is the ideal language to illustrate the idea that accomplishments feature multiple layers. Accomplishments are often regarded as consisting of three layers: an initiation layer (represented by little *v*P), a process layer, represented by VP and the layer expressing the resulting state (a small clause in our analysis below) (Chomsky 1995; Hoekstra 1988; Sybesma 1992). Whereas in an English accomplishment verb like *kill*, these layers remain obscure, in the following Mandarin sentence, we can actually *see* all three layers.

(33)   *Zhāng Sān bǎ Lǐ Sì shā sǐ le.*
         Zhang San BA Li Si KILL dead PERF
         'Zhang San killed Li Si.'

This sentence can be analysed as involving the following underlying structure (ignoring the aspectual particle *le* for now; see section 3.3 below):

(34)   [$_{vP}$ Zhāng Sān [$_{v^0}$ bǎ [$_{VP}$ -- [$_{v^0}$ shā [$_{SC}$ Lǐ Sì sǐ]]]]]
                                               KILL   dead

where *bǎ* instantiates little *v*, assigning an initiator role to *Zhāng Sān*, *shā* the V, expressing the process of going through the motions of killing (respresented as "KILL", in small caps), and the small clause *Lǐ Sì sǐ* 'Li Si dead' describing the state that the motions of killing result in. The subject of the small clause (*Lǐ Sì*) surfaces as the object of the sentence as a whole. The bare structure of the verbal complex of an accomplishment sentence (ignoring *le*) is given in (35), filled in with the lexical items of (34) repeated in (35a). The further derivation involves movement of *Zhāng Sān*, the subject of little *v* to the matrix subject position and movement of the small clause subject *Lǐ Sì* into SpecVP, in both cases for reasons of Case (i.e., licensing).[9] We also insert the element *bǎ* in the head of *v*P. The relevant part of the structure after these operations have taken place is given in (35b).

(35) [$_{vP}$ (Spec) Initiator/subj [$_{v^0}$ *v* [$_{VP}$ (Spec) -- [$_{v^0}$ V [$_{SC}$ SC-subj R(esult pred)]]]]]
      a. [$_{vP}$ Zhāng Sān   [$_{v^0}$ [$_{VP}$ --   [$_{v^0}$ shā [$_{SC}$ Lǐ Sì   sǐ   ]]]]]
      b. [$_{vP}$ <Zhāng Sān>   [$_{v^0}$ bǎ [$_{VP}$ Lǐ Sì   [$_{v^0}$ shā [$_{SC}$ <Lǐ Sì> sǐ   ]]]]]
                                                                      KILL   dead

There is one more step, not represented above, which forms a complex head consisting of V, R and *le*.
    Although all layers *can* be overtly realized, they do not always have to be; (36) expresses the same meaning as the sentence in (33):

(36)   *Zhāng Sān shā-le Lǐ Sì.*
         Zhang San KILL-PERF Li Si
         'Zhang San killed Li Si.'

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[9] The small clause analysis (Hoekstra 1988; Sybesma 1992) is of course not the only possible view on facts like these (see Huang, Li, and Li and references therein). However, whatever one's approach is, the overtness of the multiple-layered nature of accomplishments in Mandarin is always clear.

There are good reasons, however, to assume that the underlying structure of (36) is the same as that of (33), namely (35).

First of all, all sentences with *bǎ* have a counterpart without it, with virtually the same meaning. If there is any meaning difference at all, it has to do with the "information structure". As discussed in section 4, it is generally assumed that, in Mandarin, the new information focus is on the postverbal material in the sentence (Li, Thompson and Zhāng 1998). As a result, old information tends to be moved towards the left. The difference between a *bǎ*-sentence and its non-*bǎ*-counterpart is that in the former the object precedes the verb while it follows it in the latter; the noun following *bǎ* has been called a secondary topic (e.g., Tsao 1987). The non-*bǎ*-counterpart of (33) is (37). The derivational difference with (33) lies in the movement of the complex V-R-*le* (*shā-sǐ-le* 'KILL-dead-*le*') into the head of *v*P, instead of insertion of *bǎ* into that position; see (38) (once more disregarding *le*).

(37)   *Zhāng Sān shā   sǐ-le   Lǐ Sì.*
       Zhang San 'kill' dead-PERF Li Si
       'Zhang San killed Li Si'

(38)   [$_{vP}$ (Spec) Initiator/subj [$_{v^0}$ *v*   [$_{VP}$ (Spec) --   [$_{v^0}$ V   [$_{SC}$ SC-subj   R]]]]]
       a.   [$_{vP}$ Zhāng Sān   [$_{v^0}$ [$_{VP}$ --   [$_{v^0}$ shā   [$_{SC}$ Lǐ Sì   sǐ]]]]]
       b.   [$_{vP}$ < Zhāng Sān> [$_{v^0}$ shā-sǐ [$_{VP}$ Lǐ Sì   [$_{v^0}$ <shā> [$_{SC}$ <Lǐ Sì> <sǐ>]]]]]
                               KILL-dead   KILL   dead

In other words, although the little *v* layer is not realized by a separate element, both the word order and the meaning of the VP tell us that it is there. This applies to (37), as well as to (36).

The sentence in (36) seems to lack the result layer as well. Here too, there are reasons to assume that this is only apparent. First of all, if the analysis of the sentences above is more or less on the right track, especially with respect to the treatment of the object, which is really the subject of the resultative small clause, the fact that the object in (36) behaves in all relevant respects exactly the same as that in (33), suggests that (33) and (36) are structurally the same, which means that the sentence in (36) must involve a phonologically empty counterpart of *sǐ* 'dead' in (33). The sentence in (37) already shows that we can fill this element in, without any repercussions for meaning or word order. For the sake of completenes, the structure and derivation of (36) is given in (39) (disregarding *le*).

(39)   [$_{vP}$ (Spec) Initiator/subj [$_{v^0}$ *v*   [$_{VP}$ (Spec) --   [$_{v^0}$ V [$_{SC}$ SC-subj   R]]]]]
       a.   [$_{vP}$ Zhāng Sān   [$_{v^0}$ [$_{VP}$ --   [$_{v^0}$ shā [$_{SC}$ Lǐ Sì   *e*]]]]]
       b.   [$_{vP}$ <Zhāng Sān>   [$_{v^0}$ shā-*e* [$_{VP}$ Lǐ Sì   [$_{v^0}$ <shā> [$_{SC}$ <Lǐ Sì> <*e*>]]]]]

(40a-c) are some more minimal pairs, showing the same pattern: R can be left empty; empty R always has an overt counterpart.

(40)   a.   *tā mài (diào)-le wǒ-de zìxíngchē.*
            3S sell off-PERF 1S-SUB bicycle
            'He sold my bicycle.'

b. *nǐ wàng (diào)-le tā-de   míngzi ma*?
    2s forget off-PERF 3s-SUB name   SFP
    'Did you forget his name?'
c. *wǒ kàn (wán)-le   zhè-běn shū.*
    1s read done PERF this-CL book
    'I read/finished this book.'

Elements such as *diào* 'off' and *wán* 'done, finished' in (40) belong to a class of elements which Chao (1968) calls "phase complements"; we return to them below.

In conclusion, although the sentence in (36) does not have overt instantiations for all the layers, like (33) does, we see that it is easy to recognize that they actually do exist in the underlying structure of the sentence.

Facts and insights like these, and especially the realization that in accomplishments the R is always there, have led to the claim that Mandarin has no inherent accomplishment verbs (Tai and Chou 1975; Tai 1984). This can be illustrated by the famous sentence (taken from Tai 1984):

(41)   *Zhāng Sān shā-le tā sān   cì, kěshì tā méi   sǐ.*
        Zhang San KILL-le 3s three time but   3s not.have die
        'Zhang San went through the motions of killing him three times, but he did not die.'

Aside from little *v*, all accomplishments clearly consist of an a-telic activity verb and another constituent, the small clause in our analysis above, to provide the telicity.

3.1.3. Activities

The verb *shā* 'KILL' (not 'kill–'see above) is typical for the activity verbs in Mandarin in several respects. First of all, it is a-telic, and can be easily connected with a small clause to make it telic; this is, in fact, true for activity verbs in all languages. What is characteristic of Mandarin activity verbs, however, is that (with one or two exceptions; see below) they *must* always have a complement: either the result denoting small clause or an object, be it a contentful object or what we may call a "dummy object" (Cheng and Sybesma 1998a). Let us illustrate this with reference to the verb *chī* 'eat':

(42) a. *wǒmen chī-qióng-le   Zhāng Sān.*
         1P   eat-poor-PERF Zhang San
         'We ate Zhang San poor.'
     b. *wǒmen hěn xǐhuān chī píngguǒ.*
         1P   very like   eat apple
         'We like to eat apples very much.'
     c. *wǒmen zhèngzài   chī fàn ne.*
         1P   just.be.at eat rice SFP
         'We are eating.'

In (42a), we see the verb *chī* 'eat' complemented by a result denoting small clause; 'eating' is an activity, a-telic, and the small clause provides the end point: we ate and ate and the result of our eating was that Zhang San had no money left. But *chī* 'eat' can of course also be complemented by a regular object, like *píngguǒ* 'apple(s)', as in

(42b) or *fàn* 'rice' in (42c). The latter is what we call a "dummy object": it does not have any referential value; it is there simply because the complement slot of the verb has to be filled. That the dummy object has no referential value is reflected in the translation. When you say you are eating in the sense of having a meal, you use the expression *chī fàn* 'eat rice', regardless of what you are actually eating (it could be a meat pie or a pizza). When in languages such as English we can leave the object slot unfilled (eat something or other: eat), we have to use a dummy object in Mandarin. This is why we said that in Mandarin, activity verbs *must* always have a complement. The complement status of the resultative small clause, the contentful object and the dummy object is confirmed by the fact that they cannot co-occur.

The use of the dummy object may be related to the existence of *pro*-drop in Mandarin (see section 4 below): subjects and objects can be left out whenever it is clear from the context who or what is meant. Thus, the following sentence is a proper answer to a question like: What happened to the chicken?

(43)   *māo chī-le.*
         cat   eat-PERF
         'The cat ate it.'

We can analyse these sentences as involving an empty object which refers back to the 'chicken' (which may or may not be present as an empty topic in (43); J.Huang 1984). What we see, then, is that languages can have empty objects: in English the empty object is non-referential (*when do you think we should eat?* where *eat* means 'eat something or other, have a meal') and in Mandarin the empty object is referential in that it refers back to a salient object in the linguistic context, as we saw in (43). It seems reasonable to hypothesize that a language cannot have both referential and non-referential empty objects. Since Mandarin has referential empty objects, it needs dummy objects for the non-referential cases (Cheng and Sybesma 1998b). *Chī fàn* 'eat' is not the only case.

Going one step further, in fact, with the exception of *xiào* 'laugh' and *kū* 'cry', all Mandarin unergatives are transitive verbs. This is true, not only for the counterparts of verbs that are transitive in languages like English (*eat*), but also for the ones that are not, such as *walk* and *run*. Here are a few examples. Notice that they can be divided in two groups: the ones with a dummy object and the ones with a dummy verb (for the latter, see Hale and Keyser 1993).

(44) a. *zǒu-lù   hé pǎo-bù*
         walk-road and run-step
         'walk and run'
      b. *dǎ-pēnti   hé zuò-mèng*
         hit-sneeze and make-dream
         'sneeze and dream'

3.2. Intransitive structures

In this section we will briefly look at constructions with a single, internal argument. First of all, there are simple unaccusative verbs, like *lái* 'come' and *chén* 'sink'. Unaccusatives have the characteristic that the only argument can occur in postverbal position when it is indefinite.

(45) a. *wǒmen jiā   lái-le   bù shǎo rén,   Zhāng Sān yě   lái-le.*
          1P   home come-PERF not few   people, Zhang San also come-PERF
          'A lot of people have come to our house; Zhang San has also come.'
      b. *fāshēng-le   yí-jiàn dà chē-huò,   sǐ-le   hěn duō rén.*
          happen-PERF one-CL big car-accident, die-PERF very many people
          'A big car accident happened, many people died.'

Aside from simple unaccusatives, there are phrases consisting of two verbal elements, a V and an R. They are best analysed as involving the structure we discussed in the context of accomplishments: a V with a resultative small clause complement (Sybesma 1992). The nominal argument in such sentences is underlyingly the subject of the resultative small clause.

(46) a. *zhèi-kè shù zhǎng-xié-le.*
          this-CL tree grow-inclined-PERF
          'this tree is grown tilted'
      b. *Zhāng Sān zhuàng-sǐ-le.*
          Zhang San crash-die-PERF
          'Zhang San crash to death'
      c. *fàn shāo-hú-le.*
          rice cook-burnt-PERF
          'The rice got burnt.'

There are good reasons to think that the lower layer in accomplishments (V plus resultative small clause) are all unaccusative in that they have no external argument, the external argument in accomplishments being related to the "little *v*"-layer.
    Most of the V-R phrases in (46) can be preceded by the element *gěi*:

(47) a. *Zhāng Sān gěi zhuàng-sǐ-le.*
          Zhang San GEI crash-die-PERF
          'Zhang San got crashed to death.'
      b. *fàn gěi shāo-hú-le.*
          rice GEI cook-burnt-PERF
          'The rice was burnt.'

The element *gěi* is actually a verb meaning 'give' (see (32b, b') above). In sentences such as those in (47), it functions as an element that introduces an external force. The difference between (46) and (47) is that the former is really unaccusative in there being no external argument or external force, while in the latter, it seems that an external force has been added, although it is not itself overtly realized. Concretely, in (46c) the rice just got burnt, it just happened. In (47b), on the other hand, someone did it (Shěn and Sybesma 2010; see also Cheng, Huang, Li, and Tang 1997).
    The external force can be made explicit, in a way comparable to the addition of a *by*-phrase in English passives, by adding a *bèi*-phrase, although it must be stressed that structurally, English passives and Mandarin passives are quite different.

(48) a. *Zhāng Sān bèi Lǐ Sì (gěi) zhuàng-sǐ-le.*
          Zhang San BEI Lǐ Sì GEI   crash-die-PERF
          'Zhang San was crashed to death by Li Si.'

b. *fàn bèi Lǐ Sì (gěi) shāo-hú-le.*
   rice BEI Lǐ Sì GEI cook-burnt-PERF
   'The rice was burnt by Li Si.'

Sentences with *bèi* are generally referred to as passives. The element *gěi* is optional; see references mentioned above and Huang, Li and Li (2009).

3.3. Tense and aspect

3.3.1. Tense

Mandarin has no overt morphological reflex of tense. One often comes across statements to the effect that the temporal interpretation of a Mandarin sentence is determined by adverbial phrases and/or context (see references in Sybesma 2007). For instance, the sentences in (49) illustrate the use of an adverbial to manipulate tense:

(49) a. *wǒmen zhù zài Táizhōng.*
        1P   live at   Taichung
        'We live in Taichung.'
     b. *wǒmen nèi-shíhou zhù zài Táizhōng.*
        1P   that-time   live at Taichung
        'In those days we lived in Taichung.'

Whereas the sentence in (49a) is interpreted as a present tense sentence, the one in (49b) is past tense, presumably due to the adverbial *nèi-shíhou* 'in those days'. Similarly, the sentence in (50b) is interpreted as reporting on a past event due to the context given in (50a).

(50) a. *wǒmen zuótian   qù Lúndūn mǎi shū….*
        1P   yesterday go London buy book
        'we went book shopping in Londion yesterday…
     b. *zhèng yào jìn   shūdiàn   de shíhou, pèng-dào Zhāng Sān!*
        just   want enter bookstore SUB time   run-into   Zhang San
        'and when we were about to enter the bookstore, we ran into Zhang San!'

However, three factors complicate this picture: (i) the fact that a VP's Aktionsart is a factor in determining its temporal interpretation; (ii) the fact that the use of adverbials and context to influence the temporal interpretation of a sentence is limited; and, finally, (iii), the fact that viewpoint aspect can be used for tense purposes. We will briefly discuss these issues here.
    From works such as Smith and Erbaugh (2005) and Lin (2006), we know that there is a relation between the Aktionsart of the predicate and the (default) interpretation it gets. In particular, telic predicates are interpreted as referring to past events while states are seen as referring to states that are current. Here are some examples, from Lin.

(51) a. *Zhāng Sān hěn máng.*
        Zhang San very busy
        'Zhang San is very busy.'

b. *nǐ dǎ lánqiú ma*?
you play basketball Q-PRT
'Do you play basketball?'

(52) a. *Zhāng Sān dǎpò yī-ge huāpíng*.
Zhang San break one-CL vase
'Zhang San broke a vase.'
b. *tā dài wǒ qù Táiběi*.
ta take me go Taipei
'He took me to Taipei.'

The example in (51a) is like (50a), a simple state, which, in the absence of any other cues is interpreted as reporting on the current situation. In (51b), we find a simple, a-telic activity which, in isolation, also has a stative/habitual interpretation. The sentences in (52) exemplify the generalization that telic predicates by default get a past tense interpretation. In short, in isolation and without adverbials, the temporal interpretation of a sentence is determined by the Aktionsart properties of the predicate.

Interestingly, addition of a temporal adverb can change the interpretation, but not in all cases. In particular, in (52a), addition of *míngtiān* 'tomorrow', while okay in all other cases in (51) and (52), does not yield a grammatical sentence; as observed by (Hsieh 2001, 276), we need *huì* 'can, will' or *yào* 'want, will' as well (see below). What is even more interesting is that the default interpretation can only be changed using *linguistic* means: we need an adverb or other lexical cues, or *linguistic* context; non-linguistic context cannot do the job. As observed in Sybesma (2007), if we take a deceased person as the subject of a state, we do not get the result of a temporal switch. For example, the following sentence does not mean 'Premier Zhao Ziyang was (or used to be) very busy', which one would expect, knowing that Zhao Ziyang died in 2005, if non-linguistic context can change the temporal interpretation of a sentence; instead, it means 'Premier Zhao Ziyang is very busy' and is as strange or in appropriate) as the English translation.

(53) *Zhào Zǐyáng zǒnglǐ hěn máng*.
Zhao Ziyang premier very busy
'Premier Zhao Ziyang is very busy.'

This can be taken as evidence for the presence of a T-node in the structure of the Mandarin sentence after all: a node in the structure of the sentence.

The final factor that needs to be mentioned in the context of tense in Mandarin is the fact that, aside from Aktionsart, viewpoint aspect also plays a role in determining the temporal interpretation of a sentence. Just as is the case in many other languages (see Giorgi and Pianesi 1997), perfective aspect, in Mandarin expressed by *le* (see immediately below) is generally used to report on past events. Just like in languages such as Italian and Dutch, the Mandarin translation of the English *I bought a book (yesterday)* involves the perfective:

(54) *wǒ (zuótiān) mǎi-le yī-běn shū.*
1S yesterday buy-LE one-CL book
'I bought a book (yesterday).'

Before moving on to the section on viewpoint aspect, we mention that future tense (in as far as it is tense) is expressed with the use of the modal verbs *yào* (Northern speakers) and *huì* (Southern speakers):

(55)　　*wǒmen jīntiān wǎnshang yào zài nǎr　chī-fàn ne*?
　　　　1P　　today　evening　will at　where eat-rice SFP
　　　　'Where shall we have dinner tonight?'

3.3.2. Aspect

As to viewpoint aspect, Mandarin is generally said to express the progressive, experiential and completive (or perfective) aspects with (more or less) morphological means. Other aspects are expressed using adverbials (e.g., *píngcháng* 'normally' for the habitual).

3.3.2.1. Progressive
The progressive aspect is expressed with the element *zài* 'at' in front of the verb; *zài* can be strengthened with *zhèng* 'just'; an example was given in (42c). As we saw in (32a,a') *zài* is a locative element, which can be used as a preposition but it can also function as (part of) the main predicate. The progressive aspect is strengthened by attaching sentence final particle *ne* to the sentence. We find *zhèng-zài* mostly with activity verbs.

　　Another element associated with the progressive is the suffix *zhe*. Like *zhèngzài*, it can also be used in the main clause, see (56a) (though it seems more bookish than *zhèngzài*), but it is more generally found in subordinate or adverbial clauses, modifying the main predicate, as illustrated in (56b).

(56)　a.　*wǒmen chī-zhe fàn ne*.
　　　　　1P　　eat-ZHE rice SFP
　　　　　'We are eating.'
　　　b.　*wǒmen dǎsuàn zǒu-zhe　qù*.
　　　　　1P　　plan　walk-ZHE go
　　　　　'We plan to go on foot (lit. walking).'

In its subordinate use, *zhe* does not only occur with activity verbs, expressing that the action in question is going on, it also occurs with telic events, expressing that the projected end point has been reached and that the resulting state pertains (Cheng 1986b).

(57)　a.　*tā chuān-zhe lán-sè　de chèn-shān jìn-lai-le*.
　　　　　3S put.on-ZHE blue-color SUB shirt　　enter-come-PERF
　　　　　'He came in, wearing a blue shirt.'
　　　b.　*tā shǒu-lǐ　　ná-zhe　yī-tiáo kùzi　jìn-lai-le*.
　　　　　3S hand-inside take-ZHE one-CL pants enter-come-PERF
　　　　　'He came in with a pair of pants in his hand.'

The verb *chuān* in (57a) means 'wear' in the sense of 'put on' and with *zhe* signalling that the projected endpoint has been reached and that the resulting state continues, we

get the meaning 'wear' in the sense of 'have on, be wearing'. In (57b) we see something similar: *ná* means 'take', *ná-zhe* means 'hold'.

3.3.2.2. Experiential

The suffix *guo* expresses that a certain activity has taken place at least once (Iljic 1990). Its occurrence is restricted to verbs that denote eventualities which are in principle repeatable. Here is an example.

(58)   *nǐ chī-guo Zhōngguó-fàn ma*?
       2S eat-EXP China-food   Q-SFP
       'Have you ever eaten Chinese food?'

Verb phrases with *guo* are negated with *méi-yǒu* 'not have'.

3.3.2.3. Completive

To express that an event has been completed, the element *le* is attached to the verb or verbal complex ("verb-*le*"). Verb-*le* is one of the most popular topics in Chinese linguistics (Lin 2006, and references cited there). Its completive effect is clearest in the context of telic events: with such events, it signals that the projected end point has been reached. We have already seen many examples. The negative counterpart of a sentence with verb-*le* has *méi* or *méi-yǒu* 'not have'; *méi* and *méi-yǒu* cannot co-occur with *le* (as in (59)):

(59) a. *tā qí-lèi-le*   *nèi-pī mǎ*.
          3S ride-tired-PERF that-CL horse
          'he rode that horse tired'
    b. *tā méi-yǒu qí-lèi-(*le)*   *nèi-pī mǎ*.
          3S not-have ride-tired-PERF that-CL horse
          'he did not ride that horse tired'

Verb-*le* has many faces. In some contexts, to give just one example, it seems to signal inchoativity (Smith 1990; Liú 1988) as the following example shows (adapted from Sybesma 1997):

(60)   *chī-le cái   juéde yǒu yī-diǎr xiāngwèr*.
       eat-LE only feel   have a-bit   taste
       'Only after I started eating, I felt there was some nice flavor to it.'

Aside from *le*, Mandarin has a number of other elements which can be used to express completion. These are the elements referred to earlier as "phase complements", such as *diào* and *wán* in (40). In the example sentences in (40), we can still see them as somehow predicating of the object. In other words, we can analyse them as the predicate of the resultative small clause. In other cases, however, this is not possible and they express that the event has come to an end (Xuān 2008). In the following sentence, for instance, instead of only having a direct (or indirect) predication relation with one particular nominal constituent (the NP that is interpreted as the "object"), *wán* 'finish' seems to have scope over the entire event.

(61)　　*wǒmén chī wán fàn zài zǒu.*
　　　　1P　　eat done food then leave
　　　　'We'll only leave after we're done eating.'

We find this use of the phase complements in sentences in which there is no specific or referential object, such as dummy *fàn* 'rice, food' in (61), which does no more than plugging the object slot, as argued above.

4. The sentence

This section presents an overview of the sentential structure of Mandarin. As we have already seen from the numerous sentences above, Mandarin is basically a head-initial language, with SVO as the basic word order, with nominal and clausal complements following the verb (see also (62a)).

(62)　　*Lǐ Sì xiāngxìn Zhāng Sān bù xǐhuān Huáng Róng.*
　　　　Li Si believe　Zhang San not like　　Huang Rong
　　　　'Li Si believes that Zhang San does not like Huang Rong.'

We discuss some of the core features of the sentence structure of Mandarin by looking at the distribution of adverbs, verb copying, sentence final particles, topic-focus stuctures as well as the formation of questions.

4.1. Pre- and postverbal adverbs

With some exceptions, to be discussed shortly, adverbials occur preverbally. The unmarked position seems to be between the subject and the verb. However, with the exception of adverbs such as *chángcháng* 'often' and manner adverbs such as *mànmānr-de* 'slowly', they can also occur in pre-subject position. Manner adverbs are generally suffixed by *de*; other adverbs are not marked in any way. Here are some examples.

(63)　a.　*{Yǐqián} Zhāng Sān {yǐqián} chángcháng kàn diànyǐng.*
　　　　　 before Zhang San before　often　　　　watch movie
　　　　　'Zhang San used to often watch movies.'
　　　b.　*{Xiǎnrán} Zhāng Sān {xiǎnrán} gēn tāmen qù kàn diànyǐng le.*
　　　　　 obviously Zhang San　obviously with 3P　　go watch movie　　PRT
　　　　　'Obviously Zhang San went to watch a movie with them.'
　　　c.　*{Zuótiān} wǒmen {zuótiān} mànmānr-de zǒu huí jiā.*
　　　　　 yesterday 1P　　　 yesterday slow-DE　　 walk back home
　　　　　'Yesterday we walked home slowly.'

Compared to the unmarked post-subject position, the adverbs in sentence-initial position tend to be more contrastive; they are more like topics (see below).

Two types of adverbial modifiers occur postverbally: durational and frequentative expressions and a certain type of manner adverb, as illustrated in (64) and (65) respectively.[10]

(64) a. *tā kàn shū kàn-le sān-ge xiǎoshí.*
   3S read book read-PERF three-CL hour
   'He read for three hours.'

   b. *tā kàn-le nèi-běn shū sān cì.*
   3S read-PERF that-CL book three times
   'He read that book three times.'

(65) a. *Zhāng Sān kū de hěn shāngxīn.*
   Zhang San cry DE very sad
   'Zhang San is crying very sadly.'

   b. *Tā kàn xiǎoshuō kàn de hěn kuài.*
   3S read novel read DE very fast
   'He reads novels very fast.'

Postverbal manner adverbs are separated from the verb by the element *de* (etymologically different from the *de* that is suffixed to preverbal manner adverbs), which forms a phonological unit with the verb. Semantically, post- and preverbal manner adverbials are quite different. To illustrate, consider the following examples:

(66) a. *Tā mànmānr-de zǒu-guò-lái.*
   3S slowly walk-pass-come
   'He is slowly walking by.'

   b. *Tā zǒu-de hěn màn.*
   3S walk-DE very slow
   'He walks very slowly.'
   OR: 'He is walking very slowly.'

The difference is that the preverbal manner adverb can only be used to modify events that are in progress; thus, (66a) can only be used while pointing at someone who is walking by. The postverbal one can also be used that way, but (66b) can also be used to describe someone more generally: you may utter (66b), while pointing at someone who is sitting on the couch watching TV: 'he is a slow walker'.

There is no agreement on how sentences with postverbal adverbials with *de* should be analysed.

There are factors (e.g., definiteness/specificity) which affect whether or not both a nominal complement and an adjunct can follow the verb (see J.Huang 1982b; Y.-H.Li 1990; see also Y.Li 1999). The restriction on postverbal elements also leads to a frequently discussed phenomenon, namely verb-copying, to be discussed in the following section.

For insightful discussion on the distribution of the different types of adverbials realative to the verb in Mandarin, see Ernst (1999, 2002).

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[10] Durational modifiers can be integrated into the sentence in many different ways which are partly determined by the referential properties of the object if there is one; see Sybesma (1992) for an overview.

4.2. Verb copying

The examples (64a) and (65b) reveal another interesting property of Mandarin. Although Mandarin is basically head-initial, there is a restriction on the number of postverbal phrases in a clause. This concerns both nominal complements as well as postverbal adjuncts. When we have more than one constituent which should follow the verb in the same sentence, we often see that the verb is repeated. This can be seen in (64a), where we have an object and a durational expression, and in (65b), which has an object and a manner adverbial. In (67) we see the same phenomenon illustrated with resultatives:

(67)   a.   *tā dǎ Lǐ Sì dǎ de hěn cǎn.*
            3S hit Li Si hit DE very miserable
            'He hit Li Si to the extent that Li Si became very miserable.'
       b.   *tā chī fàn chī de hěn bǎo.*
            3S eat rice eat DE very full
            'He ate and became very full.'

The verb copying in (67a,b) illustrates in fact two different verb copying strategies. Though the two sentences are superficially very similar, they illustrate very different readings: in (67a), the resultative *de*-clause modifies the object argument *Lǐ Sì*, while in (67b), the resultative *de*-clause modifies the subject argument *tā* 'he'. Cheng (2007), following Sybesma (1999a), proposes that the base structures of the two sentences are in fact different, which leads to different verb copying strategies. The sentence in (67a) has the base structure in (68a), comparable to its *bǎ*-counterpart (68b) (see discussion above).

(68)   a.   [$_{vP}$ tā v [$_{VP}$ dǎ [$_{deP}$ Lǐ Sì hěn cǎn]]
                 he   hit   Lǐ Sì very miserable
       b.   *tā bǎ Lǐ Sì dǎ de hěn cǎn.*
            3S BA Li Si hit DE very miserable
            'He hit Li Si to the extent that Li Si became very miserable.'

The fact that *Lǐ Sì* is the subject of the clause labeled "*de*P" ensures the reading where the result is related to the object argument. To derive (67a), the subject of the resultative *de*-clause, *Lǐ Sì*, moves to SpecVP, while the verb *dǎ* 'hit' moves to little v. Verb copying comes about in this case, according to Cheng, because the lower copy is not deleted after movement, due to morphological fusion of the verb and *de*. This yields the effect that the lower copy is not visible to the chain reduction operation (see Nunes 2004), thus allowing copies of the verb to pronounced.

   The senetnce in (67b) has a different base structure, given in (69), the difference being that here we have no *v*P-layer (see the discussion in section 3.2 above).

(69)   [$_{IP}$ [$_{VP}$ chī fàn] [$_{VP}$ chī [$_{deP}$ tā hěn bǎo]]
                 eat rice   eat   he very full

Like *Lǐ Sì* in (68), *tā* 'he' starts out as an internal argument (inside the resultative *de*P), yielding the reading in which the resultative *de*-clause is related to the constituent that will eventually surface as the subject, because, unlike *Lǐ Sì* in (68), the argument, *tā* 'he', in (69) moves to SpecIP. Because there is no *v*P, the verb remains in VP.

According to Cheng, the higher V-O combination (i.e., *chī fàn* 'eat rice' in (67b)) is derived by a process called "sideward movement" (see Nunes 2001, 2004): the object noun phrase (*fàn* 'rice') needs to be licensed by a verb, and in this case, a copy of the main verb is used for this purpose. This generates a structure in which the V-O complex is adjoined to the verb phrase; see J.Huang (1982b; 1992) for a similar structure. This yields the second verb copy strategy, since the chain-reduction operation cannot delete either of the copies. Note that cases comparable to (67b) do not have to have a dummy object; a full noun phrase can also appear (see Cheng 2007).

4.3. Sentence final particles

One of the eye-catching features of Chinese, including Mandarin, is the presence of sentence final particles (SFPs), which color the sentence one way or another. Let us start with the ones that are often discussed in the syntactic literature, the SFPs which are generally considered to be question particles: *ma* and *ne*.

(70) a. *nǐ chī píngguǒ ma*? (adapted from Li and Thompson 1981)
         2S eat apple   Q-SFP
         'Do you eat apples?'
      b. *nǐ chī-bu-chī píngguǒ?*
         2S eat-not-eat apple
         'Do you eat apples?'

(71) a. *Hóngjiàn xǐhuān shénme ne*? (adapted from B.Li 2006)
         Hongjian like   what   SFP
         'What does Hongjian like?'
      b. *Bàba ne*?
         father SFP
         'What about father?'

Li and Thompson (1981) note that *yes-no* questions marked by the A-not-A form of the verb such as the one in (70b) are used in neutral contexts (see J.Huang 1991, McCawley 1994 as well as the discussion below), while the one with the SFP *ma* in (70a) is associated with some presupposition. For instance, (70a) can only be used in a context where the speaker does not think that the hearer actually eats apples.
    Ne is oftened considered to be a *wh*-particle. B.Li (2006) argues however that *ne* is an evaluative marker, used in declaratives (72a), *wh*- and A-not-A questions (72b) (examples adapted from B.Li 2006).

(72) a. *Xiānggǎng zuìjìn xià xuě le (ne)*.
         Hong.Kong recently fall snow PRT PRT
         'It snowed in Hong Kong lately.'
      b. *Hóngjiàn xǐ-bù-xǐhuān zhè běn shū (ne)?*
         Hongjian li(ke)-NEG-like this CL book PRT
         'Does Hongjian like this book?'

Proposing that *ne* is an evaluative marker, B.Li suggests that, in declaratives, it indicates that the proposition is considered extraordinary by the speaker and that in

questions (both *wh* and yes/no questions), the element signals that the question is considered to be of particular importance to the speaker. In cases such as (71b), B.Li considers *ne* to be a topic marker (following G.Wu 2006).

Aside from the *ma* that we see in (70a) – the one used in yes/no questions, which is called *ma₁* in B.Li (2006), there is another *ma*, marked as *ma₂*, exemplified in (73):

(73)   *Wǒ shuō jīntīan shì xīngqīsān   ma₂ --- (nǐ shuō bú shì).*
        1S   say today be Wednesday SFP   2S say NEG be
        'I said it was Wednesday today --- (you said it wasn't).'

B.Li argues that *ma₁* is actually not a marker for yes/no questions, and that *ma₁* and *ma₂* are one and the same particle. She suggests that *ma* is a degree marker, and that the same applies to the particle *ba*, in (74a).

(74) a. *Hóngjiàn zài bàngōngshì ba.*
        Hongjian at office   SFP
        '(Probably) Hongjian is in his office.'
     b. *Hóngjiàn zài bàngōngshì ma.*
        Hongjian at office   SFP$_{\text{LOW PITCH}}$
        '(Obviously/certainly) Hongjian is in his office.'

In particular, B.Li argues that in declaratives, *ba* marks a low degree of the speaker's commitment to the assertion, while *ma* marks a high degree of the speaker's commitment (as we can see from the contrast between (74a) and (74b)). In questions, we see a similar difference: whereas with *ma*, a question is quite urgent (as we just saw), *ba* is used when the question is in some sense not so urgent (the speaker thinks that s/he actually already knows the answer); compare the following example with (70a):

(75)   *nǐ chī píngguǒ ba?*
        2S eat apple   SFP
        'You eat apples, right?'

Then there is *a*, a final particle that appears in various contexts, with questions and declaratives alike. Chu (2002) considers it to be a discourse marker: it eases the sentence into the conversational context. It does so in two ways: on the one hand it makes the sentence it is attached to less abrupt, and on the other hand, it alerts the hearer that the speaker means to make an especially relevant contribution to the exchange. Some examples can be seen in (76a,b), adapted from B.Li (2006).

(76) a. *Bàba huí-lai   le a?*
        father return-come PRT SFP
        'Father is back?'
     b. *Jùshuō HuáHáng   hěn piányi a.*
        hearsay China-Airlines very cheap SFP
        'I heard that China Airlines was very cheap.'

Without *a*, the sentence in (76b), for instance, would be an out of the blue sentence, with no relation to the context. As is, it is probably uttered in the context of a

conversation on traveling to Europe in which the previous speaker may have said that tickets are hardly affordable.

Based on co-occurrence restrictions between the particles, B.Li (2006) proposes that the left-periphery of Mandarin has the following heads with the particular order:

(77)   Discourse > Degree > Force > Evaluative > Mood > Fin
           a   *ba, ma*   *ne*

For B.Li, the order put forth in (77) is a hierarchical order. The assumption made in B.Li is that these left periphery heads are right-headed. To derive the correct word order, the complement of the head moves to the specifier-position of the head, and subsequent movements of that type get us multiple SFPs (see also Sybesma 1999b).

The last SFP to be mentioned is *le* (also known as "sentence-*le*", to be distinguished from so-called "verb-*le*", discussed in section 3 above). *Le* is different from the SFPs discussed so far in terms of what semantics it adds to the sentence. Whereas the other particles modify the sentence in signalling higher or lower degrees of urgency or relevance or commitment, *le* stands much closer to the sentence (also literally: if it co-occurs with other SFPs, it always precedes the other ones). It has been associated with an interpretation akin to certain functions associated with finiteness in other languages. More particularly, by adding *le* to a sentence, one enhances the link with the utterance time, thus enhancing the actuality. An interesting side effect of this is that *le* is often connected with a change of state: the actuality is so urgent, that the implication is that whatever situation is described, did not pertain before (Li and Thompson 1981). To illustrate:

(78)   a.   *xià   yŭ   le*.
              come.down rain SFP
              'It is raining now.'
        b.   *wŏmen bù qù le*.
              1P   not go SFP
              'We are no longer going.'

Without *le*, the sentence in (78a) would simply mean: 'It is raining' – a simple statement of fact. As is, with *le*, it implies that earlier on, it was not raining (either objectively or subjectively: it is possible that it had been raining for hours, but that the speaker only discovers that it is raining now). Similarly, (78b) without *le* would say: 'We are not going'. *Le* adds the relevance to the moment of speech implying that this is a new situation: earlier on, we were still going, now, this is no longer the case.

4.4. Topic and Focus

Mandarin has been called a Topic-prominent language (Li and Thompson 1974). One reason for this claim is that it features so-called "aboutness" topics (such as *nà-chǎng huǒ* 'that fire' in the famous sentence reproduced here in (79), originally from Chao 1968, but subsequently quoted in virtually every work on topics in Chinese), which are not related to any element or constituent in the sentence, but which only have a relation with the sentence as a whole.

(79)   *nà-chăng huŏ, xìngkuī xiāofángduì lái-de-kuài.*
        that-CL fire   luckily fire.brigade come-DE-fast
        'As to that fire, fortunately the fire brigade arrived quickly.'

Topics occur in topic-comment sentences, where the topic presents old information, and the comment new information. As a consequence, topics are definite or generic.

    Aside from the Aboutness-topic, Badan (2007) argues that Mandarin also distinguishes between Hanging Topics (HT) and Left-Dislocation Topics (LDT). These two types of topics can be distinguished based on the fact that LDTs can accommodate prepositional phrases while HTs cannot. The examples in (80)-(82) illustrate that HTs and LDTs further differ on several counts: (a) HTs can be resumed by an epithet, whereas LDTs cannot ((80a) vs. (80b)); (b) multiple LDTs are allowed but multiple HTs are not (81a) vs. (81b)), and (c) HTs precede LDTs when they co-occur ((82a) vs. (82b)).

(80) a. *Zhāng Sān$_i$, wŏ gĕi [nà-ge   shăzi]$_i$ jì-le   yī-fēng xìn.*
          Zhang San 1S to   that-CL imbecile send-PERF one-CL letter
          'Zhang San, I sent a letter to that imbecile.'
      b. **gĕi Zhāng Sān$_i$, wŏ gĕi [nà-ge   shăzi]$_i$ jì-le   yī-fēng xìn.*
           to Zhang San 1S to   that-CL imbecile send-PERF one-CL letter
          'To Zhang San, I sent a letter to that imbecile.'

(81) a. *cóng zhè-jiā yínháng, tì Zhāng Sān, wŏ zhīdao wŏmen kéyĭ jièdào*
          from this-CL bank   for Zhang San 1S know 1P   can borrow
          hĕnduō qián.
          much   money
          'From this bank, for Zhang San, I know we can borrow a lot of money.'
      b. **zhè-jiā yínháng, Zhāng Sān$_i$, wŏ zhīdao wŏmen kéyĭ cóng nàlĭ   tì tā$_i$*
          this-CL bank   Zhang San 1S know 1P   can from there for 3S
          jièdào hĕnduō qián.
          borrow much money

(82) a. *Zhāng Sān$_i$, cóng zhè-jiā yínháng, wŏ zhīdao wŏmen kéyĭ tì tā$_i$ jièdào*
          Zhang San, from this-CL bank   1S know 1P   can for 3S borrow
          hĕnduō qián.
          much   money
          Lit: 'Zhang San$_i$, from that bank, I know that we can borrow a lot of money for him$_i$.'
      b. **cóng zhè-jiā yínháng, Zhāng Sān, wŏ zhīdao wŏmen kéyĭ tì tā jièdào*
          from this-CL bank   Zhang San 1S know 1P   can for 3S borrow
          hĕnduō   qián
          much   money

Whether or not topics are base-generated or moved has been a hotly debated issue (see Xu and Langendoen 1985; J.Huang 1982b; D.Shi 2000 among others). The issue may be settled if we establish more carefully the kind of topics we have. Badan (2007) argues that HTs are base-generated while LDTs involve movement (of a null operator).

Turning to focus, in Mandarin, both so-called contrastive focus and so-called information focus appear "in-situ": in-situ focus carries phonological prominence (i.e., carries stress), as illustrated in (83a-c) (stress indicated by small caps).

(83) a. *ZHĀNG SĀN chī-le   yī-ge píngguǒ.*   (SUBJECT focus)
        Zhang San eat-PERF one-CL apple
        'ZHANG SAN ate an apple.'
     b. *Zhāng Sān chī-le YĪ-GE píngguǒ.*   (NUMERAL+CLASSIFIER focus)
     c. *Zhāng Sān chī-le yī-ge PÍNGGUǑ.*   (OBJECT focus)

The *lián…dōu* 'even'-construction has been an often discussed construction in Chinese linguistics (see Tsai 1994; Shyu 1995 among others). The examples in (84a,b) illustrate that an object which is under the scope of *lián* must raise to the left of *dōu* (see Cheng 1995, 2009; S.Huang 1996, Lin 1998; Tsai 1994; Hole 2004 for discussions of *dōu*). Further, the element *lián* is optional, and the *lián*-DP can either be post-subject or pre-subject.

(84) a. *Zhāng Sān (lián) zhè-běn shū   dōu kàn-wán   le.*
        Zhang San even this-CL book DOU read-finish LE
        'Zhang San read even this book.'
     b. *(lián) zhè-běn shū Zhāng Sān dōu kàn-wán le.*

Badan (2007) shows that the typical properties of an *even*-construction, i.e., additivity, and scalarity, is expressed by two different elements in Mandarin: *lián* provides additivity, while *dōu* gives scalarity.

Aside from these "typical" cases of topics and foci, it should be noted that there are cases of object preposing which have a controversial status. These are cases in which the object is preposed to a post-subject position (similar to the position of *lián*-DP in (84a)):

(85)   *Zhāng Sān zhè-běn shū   yǐjīng   kàn-wán   le.*
        Zhang San this-CL book already read-finish LE
        'Zhang San has already read this book.'

Badan (2007) shows that the object in this position does not have an information focus reading (i.e., it cannot be used to answer a *what*-question (e.g., *what did Zhang San already read?*). Nor is it a contrastive focus. Instead, it is a contrastive topic, since it requires a contrastive context. Badan argues that it is in a low Topic projection (comparable to the topic position in the lower periphery à la Belletti 2004). Similar cases have been discussed in Ernst and Wang (1995) and Paul (2002), who come to similar conclusions.

4.5. The formation of questions

In section 2.3, we already encountered *yes-no* and *wh*-questions in connection with SFPs. Here we discuss the formation of questions (which in some cases will lead us back to the SFPs).

4.5.1. *Yes-no* questions

Like many languages in the world, *yes-no* questions in Mandarin can be marked simply by rising intonation. In addition to this intonational method, *yes-no* questions in Mandarin can be formed by the A-not-A form of the verb ((86a), see also (72b) above), as well as putting the negation at the end of the sentence, forming the so-called negative particle questions (86b):[11]

(86) a. *tā xiǎng-bu-xiǎng lái*?
          3S want-not-want come
          'Does he want to come?'
      b. *tā lái-le   méi-yǒu*?
          3S come-PERF not-have
          'Has he come or not?'

J.Huang (1991) shows that A-not-A questions such as (86a) are similar to constituent *wh*-questions in that the distribution and interpretation of the A-not-A form exhibits island effects. For instance, a sequence of the form [A not A] cannot be properly embedded in a sentential subject, as in (87).

(87)   * *[wǒ qù bu qù Měiguó] bǐjiào hǎo*. (adapted from J.Huang 1991, (33c))
          1S go not go America more good
          'Is it better for me to go to America or not?'

J.Huang (1991) posits a [+Q] operator in INFL^0, which is spelled-out by a reduplication rule as well as insertion of the negation element (see McCawley 1994 for a discussion of the negation and how these questions are similar to disjunctive *yes-no* questions). Note that J.Huang distinguishes two forms of A-not-A questions, namely [A not AB] and [AB not A], where B is the object of A, the verb, as shown here (examples adapted from J.Huang 1991):

(88) a. *nǐ xǐhuān-bu-xǐhuān zhè-běn shū*.   [A not AB]
          2S like-not-like   this-CL book
      b. *nǐ xǐhuān zhè-běn shū   bu xǐhuān*.   [AB not A]
          2S like   this-CL book not like
          'Do you like this book or not?'

According to J.Huang, unlike the [A not AB] form, [AB not A] is not derived by the reduplication rule. Instead, it is derived by a process of anaphoric ellipsis of the form [[AB] not [AB]]. In other words, the base sentence of (88b) is the one in (89).

(89)   *nǐ xǐhuān zhè-běn shū   bu xǐhuān zhè-běn shū*.
          2S like   this-CL book not like   this-CL book
          'Do you like this book or not?'

By deleting the second B (i.e., the second occurrence of *zhè-běn shū* 'this book'), we derive the sentence in (88b).

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[11] Here we do not discuss again *yes-no* questions which are accompanied by the particle *ma*; following B.Li we think that these are intonational questions, accompanied by the strengthener *ma* (see above).

Turning now to the negative particle questions (NPQs) illustrated in (86b), we note that Cheng, Huang and Tang (1997) argue that such questions are derived from disjunctive *háishì* 'or' questions. NPQs such as (90a) are derived from (90b) by (a) deletion of *háishì* 'or', (b) anaphoric deletion of the second occurrence of *lái* 'come', and (c) reanalysis of the negation as a C⁰ question particle.

(90) a. *tā lái   bu*?
          3S come not
          'Is he coming?'
      b. *tā lái   háishì bù lái?*
          3S come or   not come
          'Is he coming or not coming?'

This analysis can capture the fact that in Mandarin NPQs, the negative "particle" is sensitive to the verbal aspect, as shown in (91a,b): the negation has to be compatible with the verbal form, which will be the case given a disjunctive question on a par with (90b).

(91) a. *tā qù-le   méiyǒu/*bu*.
          3S go-PERF not.have/not
          'Did he go?'
      b. *tā huì/néng qù bu/*méiyǒu*.
          3S will/can go not/not.have
          'Will/can he go?'

4.5.1. Wh-questions

Wh-words in Mandarin stay in-situ in *wh*-questions, regardless of whether we are dealing with *wh*-arguments or *wh*-adjuncts. Also, *wh*-words stay in-situ not only in matrix questions but also in embedded questions.

(92) a. *Zhāng Sān xiāngxìn Lǐ Sì mǎi-le   shénme*?
          Zhang San believe   Li Si buy-PERF what
          'What does Zhang San believe that Li Si bought?'
      b. *Zhāng Sān bù zhīdào Lǐ Sì wèishénme méi   lái*
          Zhang San not know Li Si why   not.have come
          'Zhang San doesn't know why Li Si didn't come.'

Though both arguments and adjuncts can stay in-situ, their behavior is not the same (Lin, 1992; Tsai 1994). First, as (93a,b) show, adjuncts such as *wèishénme* 'why' cannot stay in islands while arguments can (see J.Huang 1982a, Aoun and Li 1993 among others). Second, Soh (2005) shows that *wh*-adjuncts in Mandarin show intervention effects (i.e., the *wh*-adjuncts cannot be under the scope of operator-like elements such as focus markers or negation), as in (94) (examples adapted from Soh 2005).

(93) a. *Zhāng Sān xǐhuān nǎ-ge   zuòjiā xiě   de shū*?
          Zhang San like   which-CL author write DE book
          'For which x, x an author, such that Zhang San likes the books that x wrote?'
      b. **Zhāng Sān kàn-guo Lǐ Sì wèishénme xiě de wénzhāng.*

Zhang San read-EXP Li Si why　　　write DE article
Intended: 'For what reason x, is such that Zhang San read the article that Li Si wrote because of x?'

(94)　a. *Nǐ {zhǐ/bù} rènwéi Lǐ Sì wèishénme kàn zhēntàn-xiǎoshuō?
　　　　2s　only/not think　Li Si why　　read detective-novel
　　　　'What is the reason x such that you {only/don't think} Li Si reads detective novels for x?'
　　　b. Tā {zhǐ/bù} mǎi shénme?
　　　　3s　only/not sell what
　　　　'What is the thing x such that he {only sells/does not sell} x?'

Based on the difference wh-adjuncts and wh-arguments display in terms of intervention effects, Soh (2005) concludes that wh-adjuncts in Mandarin undergo covert feature movement (see also Pesetsky 2000). Soh further suggests that wh-arguments undergo covert phrasal movement, which is in line with what J.Huang (1982a) proposes, but it is in contrast with proposals along the lines of Reinhart (1998), where it is argued for a non-movement account based on choice function application.

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