COMPLEMENTS IN NON-REFERENTIAL CONTEXTS: COMPARING ENGLISH AND CHINESE

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1.   Non-Referential Verb Use in English and Chinese

When verbs are used non-referentially, the readings that result are generally indefinite, non-specific activity readings in which actions in general are referred to, rather than their effect on any particular object. No referential object is specified, and the interpretation is that of the action denoted by the verb. This paper examines the differences between non-referential verb use in English and Chinese, looking first at a syntactic analysis for non-referential verb use in Chinese, and then discussing the sources of the differences in the way verbs are used non-referentially in the two languages.

1.1   Generic Bare Nouns

In English, a non-referential, indefinite interpretation is typically achieved through the use of a null object. Examples of such intransitive use of verbs are found in (1) and (2).

(1)   Lisa is singing

(2)   John is reading

In Chinese, the same non-referential interpretation is achieved through the use of an overt object, as seen in (3) and (4).

(3)   Lisi   zai   chang ge
       Lisi   PROG   sing   song
       'Lisi is singing'

(4)   John   zai   du   shu
       John   PROG   read   book
       'John is reading'

The verbs that appear with generic bare nouns like those in (3) and (4) are generally the Chinese equivalents of optionally transitive verbs in English, as seen in Table 1.

Table 1 (Cheng & Sybesma 1998): Dummy objects

English	Mandarin
eat	chi-fan 'eat-rice=eat'
read	kan-shu 'read-book=read'
sing	chang-ge 'sing-song=sing'
speak	shuo-hua 'speak-speech=speak'
write	xie-zi 'write-character=write'
drive	kai-che 'drive-car=drive'
run	pao-bu 'run-step=run'
walk	zou-lu 'walk-road=walk'

According to Cheng and Sybesma (1998), any empty category in Chinese is interpreted as referential, having either a linguistic antecedent or a referent that can be identified in the discourse context. Following from this assumption, they propose that the only way to achieve a non-referential reading in Chinese is to insert the overt bare noun, so as to block *pro*. In other words, the bare noun behaves as a syntactic dummy; its insertion is for purely structural reasons, and has no semantic effect.

Such a binary account predicts two possible transitive structures for Chinese: the null object is used in referential contexts, while the overt bare noun is used in non-referential contexts. But the situation is not quite so simple, as becomes apparent when we look at cases where speakers pronounce another postverbal constituent in addition to the verb, such as a postverbal manner adverb. In such cases, speakers are able to drop the overt bare noun, as seen in the contrast between (5) and (6).

(5)　ta　　zai　　pao　　bu
　　　he　　PROG　run　　step
　　　'He is running'

(6)　ta　　pao　　(*bu)　de　　hen　　kuai
　　　he　　run　　step　　DE　　very　　fast
　　　'He runs very fast'

This suggests that Chinese speakers can indeed achieve a non-referential reading through the use of a null object, just as is possible in English. Therefore, both English and Chinese can express verbs non-referentially through the use of null objects, but only Chinese has an overt instantiation of the non-referential object.

1.2　Thematic Hierarchies

The contrast between (5) and (6) reveals an interesting constraint on phrase structure that appears to exist in Mandarin Chinese but not in English. While the sentence in (7), in which an indefinite object is followed immediately by an

adverbial phrase, is acceptable in English, the somewhat equivalent Chinese sentence in (6) is not.

(7)   He runs marathons very fast

Chinese linguists have suggested that Chinese generally allows only one constituent to be pronounced following the verb; Huang (1982) formalizes this as follows:

(8)   Phrase Structure Constraint (PSC) (Huang 1982)
        Within a given sentence in Chinese, the head (the verb or VP) may branch to the left only once, and only on the lowest level of expansion.

In further accounting for the distribution of postverbal elements, Huang (1994) incorporates aspects of X'-theory, argument structure, and the thematic hierarchy to propose the following:

(9)   (a)   Thematic Hierarchy (Huang 1991, 1994:25)
                Agent > Experiencer > Ref. theme > Goal, Ind. Object > Obliques:
                                                        Non-ref. theme,
                                                        Direction/goal,
                                                        Duration/frequency,
                                                        Manner, etc.

        (b)   If a verb α determines Θ-roles $\Theta_1, \Theta_2,\ldots, \Theta_n$, then the lowest role on the Thematic Hierarchy is assigned to the lowest argument in constituent structure, the next lowest role to the next lowest argument, and so on.

Crucially, non-referential, indefinite object noun phrases and oblique adverbials such as duration/frequency and manner phrases occupy the same position – that of the innermost complement of the verb. This means that Chinese speakers do not pronounce the bare noun as well as an additional postverbal constituent. The sentence in (10), containing two postverbal constituents, is judged to be unacceptable by almost all native speakers of Mandarin Chinese.

(10)   *ta   pao   bu   de   hen   kuai
         he   run   step   DE   very   fast
        'He runs very fast'

This ungrammaticality does not exhibit lexical variation; the use of any verb followed immediately by both its generic bare noun and an adverbial phrase (introduced by the *de* particle[1]) results in an unacceptable sentence.

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[1] Following Huang 1988 and Cheng 2007, the *de* particle is treated as a secondary predicator that introduces the adverb as an inner adverbial complement of the verb.

The same ungrammaticality does not arise in English, and the reason for this might be found by appealing to the following thematic hierarchy, originally proposed by Larson (1988) to account for the double object construction in English:

(11)   Agent > Theme > Goal > Obliques (manner, location, time, etc.)

In contrast with the thematic hierarchy for Chinese, the one proposed for English does not make a distinction between referential and non-referential themes; as a result, non-referential themes and manner phrases are not in complementary distribution, and can therefore follow the verb in sequence without resulting in an ungrammatical sentence. In cases where the verb has two object complements (one, the thematic object, and two, an oblique manner phrase), the thematic object can be analyzed as occupying the Specifier of VP, and the oblique phrase as occupying complement position.

While this is not possible in Chinese, speakers of Mandarin Chinese can resort to at least two other constructions that do not violate Huang's Phrase Structure Constraint and thematic hierarchy. The most commonly used variant is the verb copying construction in which two copies of the verb are pronounced, as in (12).

(12)   ta   pao   bu   pao   de   hen   kuai
        he   run   step   run   DE   very   fast
        'He runs very fast'

The verb copying construction in (12) expresses the generic action of running, as well as the manner in which the agent typically does the action of running.

Another way to express the verb non-referentially is through the use of a null object, which yields the same interpretation as that of the verb copying construction.

(13)   ta   pao   de   hen   kuai
        he   run   DE   very   fast
        'He runs very fast'

The construction in (13) is analyzed here as containing a non-referential null object, as in the English counterpart of the same sentence.

To recap, when it comes to non-referential verb use, English and Chinese differ in two crucial ways. First, in the general case, Chinese verbs appear with their generic bare nouns, while the same verbs in English are generally used intransitively in non-referential contexts. Second, English allows verbs to be followed immediately by indefinite nouns and adverbial phrases, while Chinese does not.

2. Syntactic Analysis

Before discussing the sources of the differences between the non-referential use of verbs in English and Chinese, we first look at an analysis of the acceptable non-referential constructions in Chinese. The subsequent discussion in Section 3 will deal with whether the same analysis can be applied to English, and whether the non-referential verb constructions in the two languages might be similar in their underlying structures despite the superficial differences.

2.1 Verb Copying in Chinese (Cheng 2007)

One variant of non-referential verb use is the verb copying construction, in which both copies of the verb are pronounced.

(14) ta   pao   bu   pao   de   hen   kuai
      he   run   step run   DE   very fast
      'He runs very fast'

I adopt Cheng's (2007) analysis of verb copying constructions in Chinese, which appeals to Nunes' (2004) Copy+Merge theory of movement and analysis of sideward movement.

Assuming that the secondary predicator *de* introduces the adverb as the innermost complement of the verb, the verb *pao* 'run' has two complements with which to merge: *bu* 'step' and *hen kuai* 'very fast', introduced by the *de* particle. The verb is first merged with the *de* phrase containing the adverb:
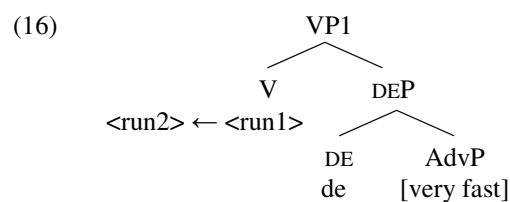
(15)

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                VP1
              /     \
            V         DEP
           run       /    \
                   DE      AdvP
                   de    [very fast]
```
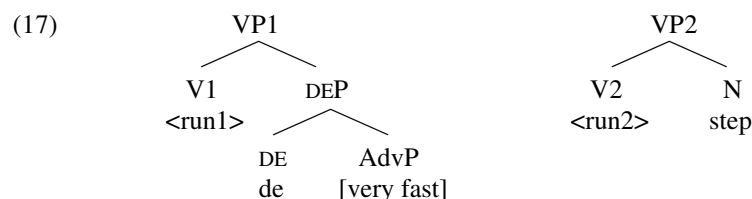
According to Roberge's (2002) Transitivity Requirement, there is an obligatory VP-internal object position, regardless of whether the object position is occupied by an overt or null object. In other words, a verb must always merge with a complement and check its theta-feature. While the derivation in (15) satisfies the structural requirement for a complement, it leaves the verb's theta-feature unchecked.
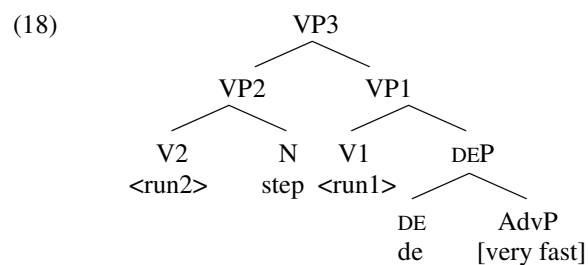
Following Cheng (2007), we appeal to the operation Copy, which is subject to the Last Resort condition, satisfied by formal feature checking (including theta-role assignment/checking) (Hornstein and Nunes 2002). Verb copying therefore occurs to check the verb's theta-feature (through *bu* 'step').

(16)

```
                    VP1
                   /    \
                  V      DEP
         <run2> ← <run1>  /  \
                         DE   AdvP
                         de  [very fast]
```

Next, sideward movement occurs as the copy of the verb merges with the object *bu* 'step', resulting in a second VP, as in (17).

(17)

```
           VP1                              VP2
          /    \                           /    \
         V1     DEP                       V2     N
      <run1>    /  \                   <run2>   step
               DE   AdvP
               de  [very fast]
```

Following this, the newly formed VP2 adjoins to the original structure, resulting in the verb copying construction, as in (18).

(18)

```
                        VP3
                       /    \
                   VP2        VP1
                  /   \      /    \
                 V2    N    V1     DEP
              <run2>  step <run1>  /  \
                                  DE   AdvP
                                  de  [very fast]
```
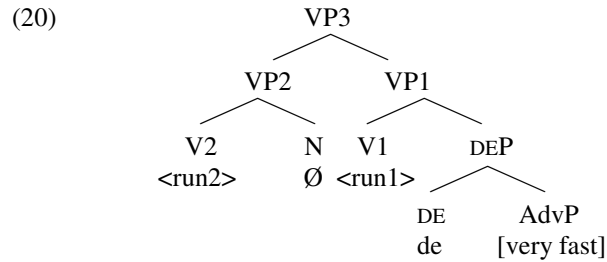
The structure in (18) yields the surface string in (14), in which both copies of the verb are pronounced, each followed by a single constituent.

2.2 Null Object Variant

The null object variant in Chinese is most similar to the English counterpart, containing a null object rather than an overt bare noun:

(19) ta   pao   de   hen   kuai
      he   run   DE   very   fast
      'He runs very fast'

Rather than the overt bare noun, it is the null object that is merged with the copied verb and that checks its theta-feature, as in (20).

(20)

```
                         VP3
                        /    \
                      VP2     VP1
                     /   \   /    \
                   V2     N  V1    DEP
                 <run2>   Ø <run1> /   \
                                  DE    AdvP
                                  de   [very fast]
```

This results in a PF representation such as the one in (21), which is unacceptable, as it yields the ungrammatical sentence in (22).

(21)   [$_{VP}$ [$_{VP}$ <run> Ø] [$_{VP}$ <run> de very fast]]

(22)   * ta   pao   pao   de   hen   kuai
          he   run   run   DE   very   fast
          'He runs runs very fast'

To account for the unacceptability of (22), I appeal to Richards' (2001, 2006) Distinctness condition on linearization, outlined in the following section.

2.2.1 Distinctness Condition on Linearization

Richards (2001, 2006) posits a constraint on linearization that acts at the syntax-phonology interface to prevent the linearization of syntactically adjacent categories with the same label. Under his analysis, linearization statements make reference only to node labels, not to particular nodes of the tree, and thus cannot impose an ordering on two nodes with the same label. For example, one ordering statement for (23) is that in (24).

(23)   [$_{TP}$ [$_{DP}$ John] [$_{T'}$ [$_{T}$ has] [$_{vP}$ eaten the macaroni]]]

(24)   <DP, T>

The linearization statement in (24) is such that the image of DP (*John*) precedes the image of T (*has*). However, according to Richards' analysis, the LCA does not see the lexical material *John* or *has*, but only the node labels. Richards hypothesizes that this is most likely because lexical insertion for functional heads takes place after linearization; therefore, Richards' Distinctness condition acts on functional heads, which supposedly undergo Late Insertion. Lexical heads on the other hand seem to freely violate Distinctness, possibly because they undergo Early Insertion; the differing lexical material that is inserted in each head allows the LCA to distinguish between otherwise identical adjacent categories. However, in the case of the verb copying construction, the two copies of the verb are lexical heads, so they undergo Early Insertion. We are therefore still left with the challenge of explaining the unacceptability of (22),

which corresponds to the PF representation in (25). What we need to rule out is the linearization statement in (26).

(25)   * [$_{VP}$ [$_{VP}$ <run> Ø] [$_{VP}$ <run> de very fast]]

(26)   * VP2 (*run*) > V1 (*run*) > DE > AP (*very fast*)

Because Distinctness does not distinguish between maximal and minimal projections (Richards 2006), we expect Distinctness to rule out VP2>V1 because it consists of two adjacent identical categories; at the same time, we expect Distinctness to fail because V is a lexical head.   But the crucial observation here is that in the case of verb copying, it is irrelevant whether lexical insertion occurs before or after linearization. VP2>V1 is ruled out on the basis of adjacent identical category as well as adjacent identical lexical material, since the lexical material inserted in both heads is non-distinct. Since VP2 (*run*) and V1 (*run*) are syntactically adjacent, identical in category, and identical in lexical and phonetic content, Distinctness is violated.

Since the realization of both copies of the verb results in the violation of Distinctness, only one copy can be privileged at PF. In determining the spellout of copies at the PF interface, we can appeal to Nunes' (2004) copy+merge theory of movement, in which there are generally two mechanisms that interact to yield the observed patterns of spellout. The first is Chain Reduction, which privileges one copy over another in order to prevent linearization contradictions at the point of spellout:

(27)   Chain Reduction (Nunes 2004)
       Delete the minimal number of constituents of a nontrivial chain CH that suffices for CH to be mapped into a linear order in accordance with the LCA.

To determine which copy is privileged at PF, Nunes appeals to the elimination of formal features in the phonological component:

(28)   Formal Feature Elimination (FF-Elimination) (Nunes 2004)
       Given the sequence of pairs $\sigma = <(F,P)_1,(F,P)_2,\ldots,(F,P)_n>$ such that σ is the output of Linearize, F is a set of formal features, and P is a set of phonological features, delete the minimal number of features of each set of formal features in order for σ to satisfy Full Interpretation at PF.

In the general case, since the highest chain link is engaged in more checking relations, it requires fewer applications of FF-Elimination than lower chain links, and is therefore the optimal candidate to survive Chain Reduction and to be phonetically realized (Nunes 2004).

Given that only one copy of the verb can be pronounced here, we appeal to Formal Feature Elimination to determine which copy is privileged at PF. While the originally merged copy <run1> has an unchecked theta-feature

(triggering Copy), the adjoined copy <run2> has its theta-feature checked by the object *bu* 'step'. Therefore, it is this copy (<run2>) that is phonetically spelled out at PF.

3.   Discussion: Typological Differences in Adverbial Complementation

One of the most intriguing questions that arises from the comparison of non-referential verb use in English and Chinese is why there is a difference at all. That is, why does English allow overt objects and adverbial phrases to follow the verb, while such a pattern triggers verb copying in Chinese?

One possibility is to assume that the adverbial phrases in question are complements in Chinese but not in English. There is only one complement position available after the verb; in Chinese, verb copying is triggered so that the adverb can occupy complement position; in English, the adverb does not occupy complement position so verb copying is unnecessary. As for accounting for the source of the complement/non-complement distinction between the two languages, we might appeal to *de*-predication. If we analyze the *de* particle as necessary in distinguishing between primary and secondary predication in Chinese[2], the fact that it functions by introducing the adverbial phrase as a complement of the verb might explain how, by coincidence, these adverbs show up as complements in Chinese. Since the *de* particle does not exist in English, the adverbs are not introduced as complements, and verb copying is not triggered. In short, for one reason or another, Chinese has evolved to include *de*-predication, thereby allowing manner adverbial complementation; the same is simply not true for English.

However, the above possibility is not the most desirable because it appeals to coincidence in accounting for the differences between the two languages. An alternative is to maintain *de*-predication as independent from adverbial complementation in Chinese. In the following section, I propose an alternative possibility which explores the idea that manner adverbials are actually the innermost complements in both languages. Under this latter analysis, other factors account for why verb copying is overtly realized in Chinese but not in English.

3.1   Adverbial Complementation and Verb Copying

Kim (2004) analyzes the apparently free distribution of different classes of adverbs and proposes that some classes of adverbs are syntactically adjuncts while others behave as complements. She proposes the following condition:

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[2] Without the *de* particle, the manner adverb is predicated of the subject NP that precedes it (primary predication); with the *de* particle, the manner adverb is predicated of the verb (secondary predication). English does not contain such a particle, possibly because such a particle is not necessary in distinguishing whether the adverb is predicated of the subject or of the verb.

(29)   Local Condition on Adverb Licensing (Kim 2004)
       Adverbs and the licensing head are in the same phase.

According to the condition in (29), an adverb can be licensed by a head only when they are in the same phase; manner adverbs therefore have to be in the same phase as V (Kim 2004). Her Class I adverbs, such as *cleverly*, can have subject-oriented interpretations (as in (30a-c)) or manner interpretations (as in (30d-e); her Class II adverbs such as *quickly* can have event readings (as in (31a-b)), or process readings (as in (31c-d)).

(30)   a.   *Cleverly*, John has been answering their questions.
       b.   John *cleverly* has been answering their questions.
       c.   John has *cleverly* been answering their questions.
       d.   John has been *cleverly* answering their questions.
       e.   John has been answering their questions *cleverly*.

(31)   a.   *Quickly*, John will be arrested by the police.
       b.   John *quickly* will be arrested by the police.
       c.   John will be *quickly* arrested by the police.
       d.   John will be arrested *quickly* by the police.
                                        (examples from Kim 2004)

Kim proposes that her local condition accounts for the distribution, since the adverbs can have scope over different phases; if *cleverly* (in (30)) has scope over IP (i.e. modifies IP), it has to be licensed by I and therefore in the same phase as I. The categories to which the adverbs adjoin (i.e. their positions in the structure) therefore determine which interpretation results. Kim goes on to show how the local condition works for Class III adverbs, which can be located sentence-initially, sentence-medially, but not sentence-finally, and Class IV adverbs, which can occur sentence-medially, sentence-finally, but not sentence-initially (Kim 2004).

       Finally, Kim arrives at Class V adverbs, which include the adverbs involved in the present study. Kim remarks that the Class V adverbs are not free in their distribution, occurring only postverbally, as in (32) through (34).

Class V adverbs (Kim 2004):

(32)   a.   John learned French *perfectly*.
       b.   *John *perfectly* learned French.

(33)   a.   Bill recited his lines *poorly*.
       b.   *Bill *poorly* recited his lines.

(34)   a.   Mary played the violin *beautifully*.
       b.   *Mary *beautifully* played the violin.

According to Kim's analysis, the adverbs above are selected by the verb, and must appear in complement position. She posits that a structural condition on complements restricts the distribution of Class V adverbs:

(35)   Structural Condition on Complements (Kim 2004)
         Complements are in the c-domain of a head.

Class V adverbs are subject to the condition in (35) as well as the condition in (29); they must be in the same phase as a licenser as well as in the c-domain of the selecting head (Kim 2004). The adverbs addressed in this study seem to behave much like the Class V adverbs above, occurring only postverbally in both English and Chinese.

(36)   a.   John runs *fast*.
         b.   *John *fast* runs.

(37)   a.   John runs *very quickly*.
         b.   *John *very quickly* runs.

(38)   a.   John writes *very well*.
         b.   *John *very well* writes.

If we analyze manner adverbials such as *very quickly* in English as the innermost complements of verbs, we might be tempted to propose that verb copying also occurs in English; since the adverbial phrase *very quickly* is merged with the verb as its complement, the verb has an unchecked theta-feature, which triggers verb copying and sideward movement. The verb copy merges with a generic null object and the newly formed VP adjoins to the rest of the structure, giving us the following form:

(39)   He run run very quickly

As we established in the discussion about Distinctness and linearization however, the spellout of both verb copies in English would always be prohibited because there is no overt bare noun in English to intervene between the two verb copies. The syntactic adjacency of the two copies would always be ruled out. Verb copying might very well exist in English then; we simply never realize or hear both copies of the verb.

        However, if the above is true, we expect that as long as there is some intervening overt element, both copies of the verb will be realized in English. For example, if we combine the sentence in (40) with the adverbial in (41), we might expect (42) rather than (43).
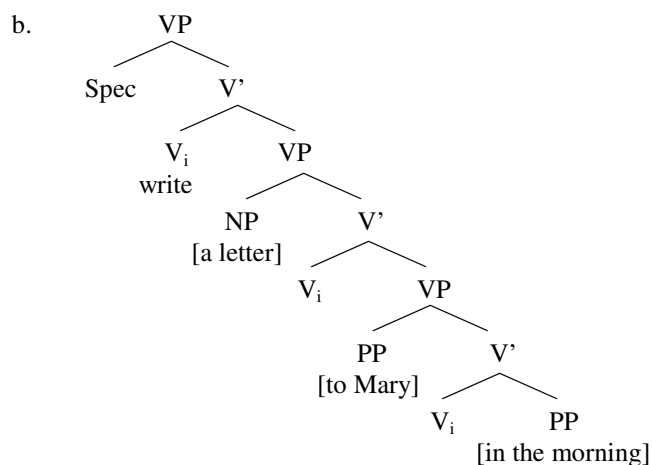
(40)   He runs marathons

(41)   quickly

(42)   *He runs marathons run quickly

(43)   He runs marathons quickly

Clearly, sentences such as (42) never surface in English. A way around this is to appeal to Larson's (1988) VP-shell analysis and thematic hierarchy. Larson proposes that certain adverbial phrases are actually the innermost complements of verbs, as seen in (44a), visualized in (44b):

(44)   a.   I wrote a letter to Mary in the morning
                                    (Larson 1988, cited by Paul 2000)

        b.

Larson's analysis includes the following thematic hierarchy which associates thematic roles in the hierarchy with positions in the syntactic structure:
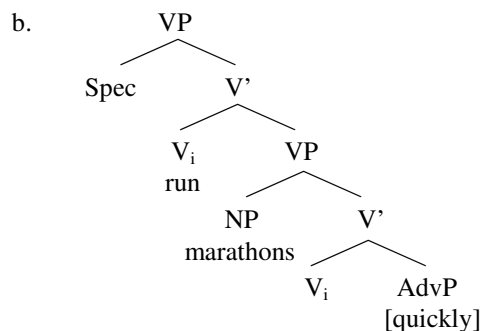
(45)   Agent > Theme > Goal > Obliques (manner, location, time, etc.)

As mentioned in Section 1.2, Huang (1991) revises this hierarchy for Chinese, a language in which certain adverbs cannot appear postverbally (and therefore cannot be placed at the lower end of the thematic hierarchy) (Paul 2000):

(46)   Agent > Experiencer > Ref. theme > Goal, Ind. Object > Obliques:
                                                Non-ref. theme,
                                                Direction/goal,
                                            Duration/frequency,
                                                    Manner, etc.

If we assume that adverbs such as those in (36) through (38) are treated as the innermost complements of verbs in English, we might assume Larson's analysis, giving us the following for the sentence in (43):

(47) a. He runs marathons quickly

  b.

```
              VP
             /  \
          Spec   V'
                /  \
              Vᵢ    VP
              run   / \
                  NP   V'
               marathons / \
                       Vᵢ   AdvP
                           [quickly]
```
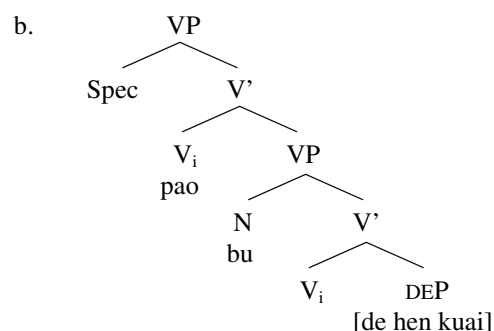
The verb undergoes standard head movement, and the higher copy is pronounced at PF. This explains why both an overt object and the adverb *quickly* can be pronounced postverbally.

What we have then is an analysis of standard movement for English but one of sideward movement for Chinese. What is it that differentiates English and Chinese, leading to two distinct analyses? In other words, why can we not apply the analysis of standard movement (as in (47)) to Chinese, or, conversely, why can the analysis of sideward movement not be applied to English?

The crucial difference to remark upon is the existence of the overt generic bare noun in Chinese. There is no equivalent overt object in English; if a non-referential generic reading is to be achieved, the null object must be used. The closest thing to the generic bare noun might be a bare plural, such as *marathons* in (47). However, according to the thematic hierarchy, *marathons* must be structurally higher than the oblique *quickly* in English. Furthermore, *marathons* is not a generic bare noun, and can appear in the Specifier of VP; there is no equivalent SpecVP position available for the bare noun in Chinese, which in any event, must appear in complement position.

As for why the standard movement (VP-shell) analysis cannot be applied to Chinese, the answer also lies in the existence of the generic bare noun and facts of the thematic hierarchy. The generic bare noun is a non-referential theme, and is therefore, according to the hierarchy, no higher than the oblique *very quickly* in the structure. Simply based on this fact, a sideward movement analysis seems fitting, as it places neither the bare noun nor the oblique higher than the other. Furthermore, we assume that the bare noun, syntactically and semantically selected by the verb, must be in a complement position, i.e., sister to the verb. In any event, there is no SpecVP position available for the bare noun, ruling out the following in Chinese:

(48) a. *ta   pao   bu   de   hen   kuai
       he   run   step DE   very fast
       'He runs very fast'

b.

```
              VP
           ╱      ╲
        Spec        V'
                 ╱     ╲
              V_i        VP
              pao     ╱     ╲
                    N         V'
                   bu      ╱     ╲
                        V_i        DEP
                              [de hen kuai]
```

In sum, there are at least two ways of explaining why Chinese and English differ in terms of non-referential verb use. The first possibility is that Chinese allows adverbs to behave as complements because of the possibility of *de*-predication. The second possibility is that the manner adverbials treated in this study are inherently complements in both English and Chinese. In the case of the latter analysis, we must appeal to a VP-shell (standard movement) analysis for English, while maintaining the verb copying (sideward movement) analysis for Chinese. The differences between these two types of analyses allow us to account for the differences in the surface strings that represent non-referential verb use in the two languages. In English, both an object and an adverbial phrase can be found postverbally, while in Chinese, verb copying in sideward movement results in one constituent being pronounced after each copy of the verb.

4.   Conclusion

While a VP-shell (standard movement) analysis appears to account for the non-referential verb data in English, a verb copying (sideward movement) analysis allows us to account for the equivalent non-referential constructions in Chinese. The analysis proposed in this paper suggests that in Chinese, all instances of non-referential verb use in which the verb first merges with a non-thematic complement (such as an adverbial phrase) are underlying instances of the verb copying construction.   It is proposed that constraints on linearization, distinctness, and phonetic realization of verb copies at the PF interface determine which variant of non-referential verb use surfaces.

The crucial differences between English and Chinese that lead to different non-referential structures seem to be related to the existence of the overt generic bare noun in Chinese, the Phrase Structure Constraint, and differing thematic hierarchies in English and Chinese. Crucially, non-referential themes and manner adverbials are in complementary distribution in Chinese, appearing as complements of the verb. As a result, verb copying always arises in cases where a postverbal adverbial phrase is merged, and we obligatorily end up with only one constituent pronounced following each copy of the verb. A verb is therefore only ever first-merged with a single complement, deriving the Phrase Structure Constraint proposed in Huang (1982).

The proposed analysis also hinges on the assumption that verbs are, at least in their syntactic representation, obligatorily transitive, as per Roberge's (2002) Transitivity Requirement. Chinese and English seem to exhibit a mirror image pattern of object distribution in this respect, with overt realization of non-referential objects and null realization of referential objects in Chinese, and null realization of non-referential objects and overt realization of referential objects in English. The overt realization of non-referential objects in Chinese appears to support Roberge's Transitivity Requirement. While the non-referential use of verbs has traditionally been analyzed as "intransitive" based on languages such as English, the Chinese data seem to suggest that there is in fact an object position that can be filled, even in the most "intransitive" of cases.

In conclusion, the proposed syntactic analysis accounts for the non-referential verb constructions of Chinese and English, and also provides insight into the sources of the differences between the non-referential structures of the two languages.

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