Chinese Syntax and Semantics

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Chapter 7

Verbless Adverbial Clauses and Economy[*]

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Abstract
In this article, various properties of the verbless adverbial clauses in Chinese are explored. It is argued that verbless adverbial clauses are not really 'verbless'. There should be a phonetically null verb and its extended projections like TP and CP in the structure. Furthermore, it is argued that verbless adverbial clauses are not unique in Chinese. Some of their properties can also be found in absolute clauses in English. Particularly, a phonetically null verb is permitted in both Chinese and English. Given the existence of the phonetically null verb, it is claimed that phonological structure is constructed minimally. A consequence of this claim is that phonetically null verbs should always be preferable. Verbless clauses should be 'unmarked' in natural languages.

1 Introduction

In the study of linguistics, we explore interesting facts of a particular language, from which we can discover the constraints and rules that govern the grammar of that particular language. In order to achieve the goal of explanatory adequacy, we must first observe and describe the facts adequately. If the generalizations

we get are accurate enough, we will be able to explain and perhaps predict the grammaticality judgment of native speakers of that language.

To what extent are human languages alike? To answer this question, we must broaden our view and study more than one language in a comparative approach.

Variations and common properties of different languages can be discovered, some of which could be shared by all human languages universally. It is likely that the universality of the shared properties is not by chance. They could be innate knowledge not taught by anyone in school. Discovering such kind of properties of human languages becomes an important goal in the study of generative grammar.

Under the principles-and-parameters framework of generative grammar, some meaningful questions can be asked: (i) What are the distinctions between 'principles' and 'parameters'? How can we distinguish the universal properties from the language-particular properties? (ii) What are the distinctions between the devices that are part of the 'computation system' of human language and those that are imposed from the 'external system'?

Every sentence in English presumably has a verb. What is interesting in Chinese is that some sentences may allow nonexistence of verbs. Whether verbs can be omitted in sentences seems to distinguish Chinese from English. In this article, I will discuss the following three questions by using the data from a kind of verbless clauses known as 'verbless adverbial clauses' in Chinese.

(1)   *Questions regarding verbless adverbial clauses*
       (a)   What are the properties of Chinese verbless adverbial clauses?
       (b)   Are those properties universal or language-particular?
       (c)   What conditions are the verbless adverbial clauses subject to?

The purpose of this article is to investigate the principles and constraints that govern the building of verbless adverbial clauses in Chinese as well as in English under a comparative approach. I am particularly interested in looking at the nature of phonetically null verbs. I hope that after studying the three questions in (1), we may understand how the properties of verbless adverbial clauses shed light on the universality of human languages.

This article is organized as follows. In section 2, I will explore various properties of the verbless adverbial clauses in Chinese. In section 3 I will compare similarities and differences between the verbless adverbial clauses in Chinese and absolute clauses in English. In section 4 the focus of the discussion will be on phonetically null verbs, in which I will argue that there is an empty verb in verbless adverbial clauses and propose that phonetic features are required only when necessary, subject to an economy principle.

2   Verbless Adverbial Clauses and Their Properties

Sentences in Chinese have verbs. For example, *shi* 'be' and *xihuan* 'like' are verbs in Chinese.

(2)   Ta <u>shi</u> Deguoren.
       he be German
       'He is a German.'
(3)   Wo <u>xihuan</u> dongtian.
       I   like   winter
       'I like winter.'

Interestingly, as observed by Xing (1984), Chinese allows some clauses without a verb, for example, (4). As the sentence final particle SFP *le* never occurs in nominals in Chinese, the existence of *le* in (4) suggests that it is a clause rather than a simple noun phrase. If (4) is a clause, it should have a 'propositional' interpretation and *shi nian* 'ten years' can be analyzed as a predicate nominal.

(4)   Shi nian le, …
       ten year SFP
       'As it has been ten years, …'

Notice that (4) sounds incomplete. Its judgment will be improved if it is followed by another clause. As observed by Xing (1984), (4) mainly functions as a subordinate clause. For example, (5) is used as a reason clause that modifies the main clause *yao zhuyi zhengjie* 'pay attention to tidiness'. By virtue of their adverbial status, for the ease of presentation, examples such as (4) are called 'verbless adverbial clauses' in this article.

(5)   Da guniang le,   yao zhuyi zhengjie!
       big girl   SFP must mind tidy
       'As you are already a grown-up girl, you must pay attention to tidiness!'

As the sentence final particle *le* and the perfective aspect marker *le* are homophonous in Chinese, how do we know that *le* in (4) is a sentence final particle rather than an aspect marker? Data from Cantonese may give us some hints.

Unlike Mandarin Chinese, the counterparts of the sentence final particle *le* and the aspect marker *le* in Cantonese are not homophonous, but are realized as *laa* and *zo*, respectively. (6) shows that the sentence final particle *laa* following the aspect marker *zo* linearly in Cantonese is perfectly acceptable.

(6)   Keoi zau zo laa.
        he   leave Perf SFP
        'He has left.'

Similar examples of verbless adverbial clauses can be found in Cantonese. The contrast among (7), (8), and (9) in Cantonese shows that only the sentence final particle *laa* but not the aspect marker *zo* is allowed to enter the verbless adverbial clauses. Data from Cantonese suggest that *le* in (4) should be analyzed as a sentence final particle instead of an aspect marker in Mandarin.

(7)   Sap nin laa, ...
       ten year SFP
       'As it has been ten years, ...'
(8)   *Sap nin zo, ...
       ten year Perf
(9)   *Sap nin zo laa, ...
       ten year Perf SFP

Notice that the sentence final particle *le* cannot be omitted in the verbless adverbial clauses. If *le* is removed, the expressions without *le* are not clauses anymore. For example, compared with (4), *shi nian* 'ten years' in (10) is only a noun phrase and is not used as a clause.

(10)   shi nian
       ten year
       'ten years'

Notice that the choice of sentence final particles in the verbless adverbial clauses is quite restrictive. Let us consider other sentence final particles in Chinese. For example, *laizhe* is a sentence final particle that indicates 'recent past'. Syntactically, both *le* and *laizhe* are analyzed as the same class of sentence final particles, i.e. temporal sentence final particles (Zhu (1982), Tang (1998)). The grammaticality judgment of (11) shows that the choice of temporal sentence final particles in verbless adverbial clauses is basically restricted to *le*.

(11)   *Shi nian laizhe, ...
       ten year SFP
       'As it has been ten years, ...'

In addition to temporal sentence final particles, some mood particles, such as *ma*, can enter the verbless adverbial clauses (Xing (1984)), as in (12).

(12)   Lao bing le   ma, ...
       old soldier SFP SFP
       'As (we are) old soldiers, ...'

Adverbs cannot modify nominal phrases. Presumably, they modify phrases that have verbal properties. Interestingly, adverbs, such as *dou* 'already', can be added to verbless adverbial clauses, for instance, (13). Given the fact that adverbs can exist, verbless adverbial clauses should be analyzed as verbal clauses.

(13)   Dou   da guniang le, ...
       already big girl   SFP
       'As (you are) already a grown-up girl, ...'

Furthermore, verbless adverbial clauses in Chinese convey a dynamic episodic meaning. For example, the predicate nominal *shi nian* 'ten years' in (4) is a numeral phrase that can denote an ordinal meaning. Such an ordinal meaning may provide a 'time frame' in which an event undergoes a change of state. (4) may be used to describe the changes taking place in a certain situation in the past ten years.

Xing (1984) notes that the existence of numeral phrases improves the judgment of some verbless adverbial clauses. Compare (14) and (15). According to Xing (1984), the numeral modifier *san bai bang* 'three hundred pounds' may help the predicate nominal *zhu* 'pig' to convey a meaning of change of state. As the numeral phrase *san bai bang* 'three hundred pounds' can denote an ordinal meaning, it may help the hearer interpret that the pig was gaining weight to three hundred pounds and became heavier. Hence, the meaning of change of state in (14) emerges. (15), however, does not give us any hints about whether the pig became heavier. Due to the lack of information, it is not clear whether the situation denoted by (15) is dynamic or not.[1]

(14)   San bai   bang de zhu le, ...
       three hundred pound Mod pig SFP
       'As it is already a pig of three hundred pounds, ...'
(15)   *Zhu le, ...
       pig SFP

Can the verbless adverbial clauses be regarded as vocatives? Basically, proper names can be used as vocatives, such as *John* in (16) and *Zhangsan* in (17). If the predicate nominal in the verbless adverbial clauses is a proper name, the sentence is acceptable only if the so-called proper name is interpreted as an

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[1] One possibility to improve (15) is to create a scenario in which something/someone has changed to a pig and that object/person is now having the property of being a pig.

indefinite common noun. Consequently, the predicate nominal in the verbless adverbial clauses should not be analyzed as a vocative expression. For example, (18) will be deviant unless *Zhangsan* does not refer to a particular person in the discourse. The only possible reading of (18) is that *Zhangsan* refers to the characteristics of being Zhangsan and the nominal in (18) has a 'propositional' interpretation.

(16) **John**, please come here!
(17) **Zhangsan**, ni guolai!
       Zhangsan you come
       'Zhangsan, you come here.'
(18) **Zhangsan** le, yao zhuyi zhengjie!
       Zhangsan SFP must mind tidy
       (i) 'As you are already a Zhangsan, you must pay attention to tidiness!'
       (ii) *'Zhangsan, you must pay attention to tidiness!'

The ungrammaticality of (19) further illustrates that the predicate nominal in verbless adverbial clauses cannot be definite, given that nominals with the demonstrative *zhe* 'this' are definite.

(19) *Zhe ge da guniang le, ...
       this Cl big girl   SFP
       'As (you are) already this grown-up girl, ...'

Xing (1984) points out that the subject is usually phonetically null in verbless adverbial clauses. If the subject exists, the verb *shi* 'be' must be used, as in (20).

(20) Ni shi da gunian le!
       you be big girl   SFP
       'You are already a big girl!'

However, as noted by Shi (2000) and the anonymous reviewer, having a subject in verbless adverbial clauses is perfectly acceptable. For example, (21) is from Shi (2000) and (22) is given by the reviewer.

(21) Ni dou   san-ge haizi de   baba le, ...
       you already three-Cl child Mod father SFP
       'As you are already a father of three children, ...'
(22) Ta lao youzi   le, ...
       he old wily-person SFP
       'As he is already a wily person, ...'

Whether or not the null subject in verbless adverbial clauses has an antecedent in the main clause depends on the discourse although it seems that the 'default' option is that the null subject finds its antecedent in the main clause. For example, the null subject only refers to the subject of the main clause in (23). If it is forced by the discourse, the null subject may refer to a presupposed entity. Contextual as well as pragmatic information forces the null subject to find its antecedent in the discourse in (24).[2]

(23) $e_{i/*j}$ dou   san-ge haizi de baba le, ni$_i$ hai zheme ainao.
                already three-Cl child Mod father SFP you still so   naughty
       'As (you) are already a father of three children, (how come) you are still so naughty.'
(24) [Suppose that the conversation was about a pig.]
       e dou   san bai   bang le, ni hai bu xiang jia?
          already three hundred pound SFP you still not want marry
       'As (the pig) is already three hundred pounds, how come you still don't want to get married?'

Let me summarize the major characteristics of the verbless clauses in Chinese as the following.

(25) *Characteristics of verbless adverbial clauses in Chinese*
       (a)   The verbless adverbial clauses are subordinate clauses/adjuncts.
       (b)   The temporal sentence final particle *le* cannot be omitted.
       (c)   The temporal sentence final particle is restricted to *le*.
       (d)   Mood particles, such as *ma*, may occur.
       (e)   Adverbs, such as *dou* 'already', can be added.
       (f)   The predicate nominal indicates a change of state.
       (g)   The nominal predicate must be nonreferential/indefinite.
       (h)   The subject may or may not be phonetically null. The 'default' antecedent for the null subject is in the main clause.

In the following discussion, I will mainly focus on some of these characteristics selectively, particularly on those related to the hypothesis of having an empty verb in verbless adverbial clauses.

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[2] Thanks to Jianhua Hu who drew my attention to examples like (24).

3 Verbless Adverbial Clauses and Absolute Clauses

Verbless adverbial clauses are clauses that lack a verb. Are they 'unique' in Chinese? Can we find similar examples in other languages, for example, English? It is a well-known fact that every English sentence must have a verb. Basically, sentences without a verb are ungrammatical in English.[3]

(26) John *(is) a genius.
(27) John *(is) very clever.

I notice that some clauses in English look like the verbless adverbial clauses in Chinese, such as the bracketed clauses in (28)-(32).

(28) [Christmas then only days away], the family was pent up with excitement.
       (Quirk et al. (1985:1120))
(29) [Confident of the justice of their cause], they agree to put their case before an arbitration panel.
       (Quirk et al. (1985:1121))
(30) [With Mary still in Florida], Fred must be lonely.
       (McCawley (1998:209))
(31) [With Mexico City currently the world's largest city], I'm surprised that your company doesn't have an office there.
       (McCawley (1998:209))
(32) [With these issues already old hat], we'll have to look for some more topics for position papers.
       (Riehemann and Bender (1999:487))

As the bracketed elements are not explicitly bound to the matrix clause syntactically, they are known as 'absolute clauses' in the literature (Quirk et al. (1985)). Similar to Chinese verbless adverbial clauses, verbs are missing in absolute clauses. Other similarities that Chinese verbless adverbial clauses and English absolute clauses share include the following.

First, both Chinese verbless adverbial clauses and English absolute clauses are subordinate clauses and also function as adverbial clauses. For example, the bracketed element in (28) cannot be used independently, as illustrated in (33). For the ease of presentation, Chinese verbless adverbial clauses and English absolute clauses may be simply grouped under 'verbless adverbial clauses' hereafter.

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[3] For a discussion on the ungrammaticality of omitting the copula in English predicative sentences, see Tang (2001b).

(33) *Christmas then only days away.

Second, adverbs, such as *then* in (28), *still* in (30), *currently* in (31), and *already* in (32), can be added, showing that absolute clauses are clauses instead of nominals.

Third, the subject of absolute clauses may or may not be phonetically null. *Christmas* in (28) is an overt subject whereas the subject of the absolute clause in (29) is null.

Fourth, if the subject of absolute clauses is null, its antecedent is normally in the main clause (Quirk et al. (1985)). For example, (35) is a paraphrase of (34)(=(29)) by a finite clause.

(34) Confident of the justice of their cause, they agree to put their case before an arbitration panel.
(35) Since **they** were confident of the justice of their case, **they** agreed to put their case before an arbitration panel.

If the antecedent for the null subject is not found in the main clause, the judgment is deviant. For example, the subject of the absolute clause in (36) is null, which presumably cannot refer to the subject of the main clause *our economy*. As the sentence provides no means for identifying the null subject, (36) becomes unacceptable. The unacceptable absolute clause in (36) is also known as an 'unattached' clause (Quirk et al. (1985:1121)).

(36) *A result of the rise in prices, our economy is suffering.

As pointed out by Quirk et al. (1985), the judgment of some 'unattached' clauses may improve in some contexts. Notice that their acceptability varies according to how easily the particular hearer can interpret the null subject. For example, the null subject of the absolute clause in (37) refers to neither the subject *I* nor the object *you* in the main clause; instead, it refers to the whole of the main clause. The judgment of (38) is due to Quirk et al. (1985). According to them, (38) will become acceptable if it is interpreted as something like 'As a professor of political science, *I* have found it interesting ...', in which the null subject of the absolute clause refers to the speaker of (38) which is supplied by the discourse.

(37) I'll help you [if necessary].
       (Quirk et al. (1985:1122))
(38) ?[As a professor of political science], it has been interesting to spend a year in Germany.
   (Quirk et al. (1985:1123))

Although English absolute clauses may have a preposition-like element *with* in (30), (31), and (32) that is apparently missing in Chinese verbless adverbial clauses, I will argue in the next section that *with* in absolute clauses and the mood particles in Chinese verbless adverbial clauses can be treated on par.

The significance of the discussion in this section is that verbless adverbial clauses are not unique in Chinese. It will be a mistake to claim that only Chinese nouns can be used as 'predicates' without a verb on the surface. Some of the properties of Chinese verbless adverbial clauses are also shared by the absolute clauses in English. In this regard, Chinese does not differ from English too much.

4 Constraints on Verbless Adverbial Clauses

4.1 Syntax of Verbless Adverbial Clauses

Given that verbless adverbial clauses are sentential adjuncts, I assume that they are adjoined to the main clause CP, as in (39). 'Adjunct' in (39) refers to the verbless adverbial clause.

(39)

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            CP
           /  \
     adjunct    CP
       /\        /\
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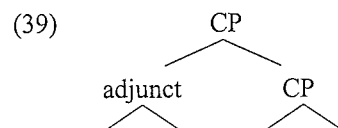
Regarding the internal structure of verbless adverbial clauses, I propose that there is a phonetically null verb ∅, whose interpretation is equivalent to the copula *shi* 'be'. The possibility of having adverbs in verbless adverbial clauses suggests that they are not really 'verbless'; instead, there should be a verbal projection, for instance, VP, to license adverbs (Travis (1988)). Adverbs, such as *dou* 'already', are adjoined to VP. Note that the term 'verbless' used in this article is merely descriptive and informal. Verbless adverbial clauses are 'verbless' only phonologically/on the surface and they should have an underlying verb.

In addition to VP, verbless adverbial clauses should have a full-fledged clausal structure, i.e. that the null verb has its extended projections TP and CP in the structure, along the lines in Grimshaw (1991).[4] 'SU' in (40) is the subject, which may be realized as an empty category. 'NP' is the predicate nominal,

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[4] Verbless adverbial clauses may have a light verb *v*. For simplicity, the light verb is omitted in (40).
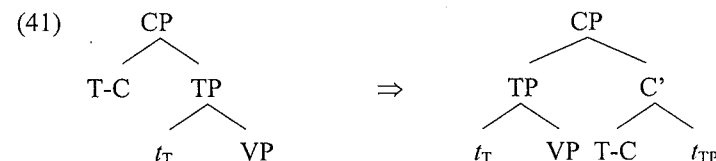
which is the object of the null verb. Note that word order and irrelevant details are ignored in (40) for the moment.

(40)   ... [$_{CP}$ C [$_{TP}$ SU T [$_{VP}$ ∅ NP]]]

T in Chinese can be morphologically realized as temporal sentence final particles, such as *le* (Sybesma (1996), Zhou (1996), Xu (1997), Zhang (1997), Tang (1998)). In verbless adverbial clauses, T is always overtly realized as *le*. The sentence final particle *le* is realized with respect to a reference time and is anchored on a deictic time. It may signal a 'current relevant state', which claims that 'a state of affairs has special current relevance with respect to some particular situation' (Li and Thompson (1981:240)). The status of referring to the current relevant state of *le* shows that *le* links the event with the real world being interpreted as a deictic element. The interpretation of *le* could be analyzed as the 'perfect'.

How about C in (40)? Recall that the mood particle *ma* may enter verbless adverbial clause in Chinese. I assume that C in Chinese is optionally realized as mood particles like *ma* to express certain illocutionary force (cf. Lee (1986), Cheng (1991), Li (1992), Tang (1998)).

Let us assume with Kayne (1994) that 'specifier-head-complement' is the universal word order of human languages. To derive the right word order, I propose that T moves to C followed by TP remnant movement to the specifier of CP. Both T-to-C movement and TP movement in Chinese are triggered by morphological affix features, particularly for PF convergence. The derivation can be shown in (41).

(41)

```
        CP                           CP
       /  \                         /  \
    T-C    TP          ⇒         TP     C'
          /  \                   /\    /  \
        t_T    VP             t_T  VP T-C   t_TP
```

In verbless adverbial clauses in Chinese, T and C can be overtly realized as *le* and *ma*, respectively. The hierarchical order in (41) can account for certain word order issues. Cross-linguistically it is found that suffixes closer to the base consistently relate to functional heads that are lower than those licensing outer suffixes. Such a morphological universal is known as the Mirror Principle (Baker (1985)). Let us assume that sentence final particles are suffixes and the 'main clause' is the base. Under the Mirror Principle, the ordering effects in sentence final particles in Chinese suggest that the category that is associated with the mood particle *ma* should be structurally higher than *le*. After T moves to C, a new sentence final particle cluster is formed. According to the LCA, the word order of the cluster will become '*le* + *ma*'. This is exactly what we can see

in Chinese verbless adverbial clauses, for instance, (12), as repeated in (42). (43) shows that the reverse order of the two particles is ungrammatical.

(42)   Lao bing le ma, ...
       old soldier SFP SFP
       'As (we are) old soldiers, ...'

(43)   *Lao bing ma le, ...
       old soldier SFP SFP
       'As (we are) old soldiers, ...'

Regarding the absolute clauses in English, I assume that they basically share the same structure (40) with Chinese verbless adverbial clauses. Although they are 'verbless' on the surface, there should be a phonetically null verb underlyingly in absolute clauses in English. CP and TP are extended projections for the null verb.

C in English absolute clauses is not always null. I assume that it can be overtly realized as *with* in (30), (31), and (32), *if* in (37), or *as* in (38), all of which are analyzed as complementizers in English. Although *with* is usually regarded as a preposition in English, there is a close relation between prepositions and complementizers in English. Semantically, *with* in absolute clauses functions as a marker indicating a conditional relationship semantically (Quirk et al. (1985:1090)),[5] similar to the complementizer *if*. Along these lines, *with* in absolute clauses can be analyzed as a 'prepositional complementizer'. What is the status of *as* in (38)? Following Starke's (1995) analysis of *as* in English small clauses, I assume that *as* in (38) is a complementizer, taking a clause as a complement.

Regarding T, I assume that it is null in the examples of English absolute clauses, perhaps due to finiteness of these adverbial clauses. Suppose that T in both Chinese verbless adverbial clauses and English absolute clauses is nonfinite. The only difference between Chinese and English is that T is always realized as the particle *le* in Chinese whereas it is null in English. The variation between these two languages lies on the morphology of finiteness. Unlike English, nonfinite T is not necessarily null in Chinese. Strictly speaking, what the sentence final particle *le* conveys is the perfect rather than finiteness in Chinese.[6]

Based on the word order in English, I assume that (44) is the structure for absolute clauses in English. C in English does not have the morphological affix feature that triggers TP movement and thus TP does not move to the specifier of CP, unlike Chinese (cf. (41)). According to the LCA, TP always follows C on the surface in English.

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[5] *With* is analyzed as a 'subordinator' in Quirk et al (1985).
[6] The perfect and finiteness should be two different systems. The former is a construction that has both temporal location and aspectual characteristics (Smith (1997)).

(44)

(*with*)
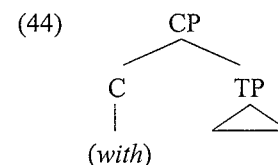
How do we know that Chinese verbless adverbial clauses are really nonfinite?[7] There appear certain contrasts between verbless adverbial clauses and finite clauses in Chinese. For example, the bracketed clause in (45) is a verbless adverbial clause, which is an adjunct of the sentence. The complement position of the verbs like *zhidao* 'know' in (46) is typically occupied by finite clauses in Chinese. As the verbless adverbial clauses cannot occur in the position reserved for finite clauses, the ungrammaticality of (47) seems to be evidence for the claim that the verbless clauses are infinitives.[8]

(45)   [Daxue   jiaoshou le], Zhangsan hai mei you ziji de fangzi.
       university professor SFP Zhangsan still not have self Mod house
       'Although he is already a university professor, Zhangsan still does not have his own house.'

(46)   Zhangsan zhidao [*e* keyi dang daxue   jiaoshou].
       Zhangsan know   can be   university professor
       'Zhangsan knows that (he) can be a university professor.'

(47)   *Zhangsan zhidao [*e* daxue   jiaoshou le].
       Zhangsan know   university professor SFP
       'Zhangsan knows that he is already a university professor.'

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[7] The grammaticality tests of finiteness in Chinese discussed in the literature, such as those in Huang (1982) and Li (1990), cannot be applied to the verbless adverbial clauses simply because those tests are only applicable to overt verbal predicates.

[8] The ungrammaticality of (i) shows that the verbless adverbial clause cannot be the complement of the canonical control verbs. I assume that (i) is ruled out by semantics. The event expressed by the complement of control verbs, such as *quan* 'advise' in Chinese, is basically 'unrealized' (Li and Thompson (1981)). As the event expressed by verbless adverbial clauses is 'realized', the control verb and the verbless clause are in conflict and (i) becomes unacceptable.

(i)   *Wo quan ta [daxue   jiaoshou le].
         I advise he university professor SFP
         'I advise him to be a university professor.'

Recall that the subject of the adverbial clauses in Chinese and English may be optionally null. Is there an empty category in the null subject position? From a theory-internal consideration, the answer is *yes*.

Chomsky (1999) points out that V and T are basically defective, i.e. ϕ-incomplete. A probe is 'ϕ-complete' if it has a complete set of ϕ-features to delete uninterpretable features of the goal.[9] A probe is regarded as 'defective' when it is unable to inactivate the goal by deleting its uninterpretable features. Whether T is ϕ-complete depends on the category that selects T. Chomsky (1999:6) assumes the following.

(48)   C is ϕ-complete; T is ϕ-complete only when necessary.

According to Chomsky (1999), C with a complete set of ϕ-features (C_{comp}) selects ϕ-complete T (T_{comp}). C is one-one associated with ϕ-complete T. When T is selected by C, it will be ϕ-complete; when T is selected by V, it will become defective (T_{def}). Let us take this view to be correct. Recall that C exists in both Chinese verbless adverbial clauses and English absolute clauses. The existence of C in these adverbial clauses suggests that T must be ϕ-complete by virtue of the fact that it is selected by C.

Suppose that T is nonfinite in the adverbial clauses in both Chinese and English. If T is ϕ-complete, it allows an EPP-feature and will exhibit agreement (Chomsky (1999)). Case of the matched goal, located in the specifier of TP, will be assigned a value. When the subject of the adverbial clauses is null, it is not really empty; instead, there is an empty category PRO, which receives 'null Case' from T, along the lines in Chomsky and Lasnik (1993).[10]

Recall that the antecedent for the null subject in those adverbial clauses is basically in the main clause unless it is forced by the discourse. As the adverbial clause is directly predicated of the main clause, such kind of adjunct control can be regarded as 'predicative control', in the sense of Williams (1992). That is why having an antecedent in the main clause is preferable in verbless adverbial clauses.

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[9] According to Chomsky (1998, 1999), a 'probe' is an element that seeks a matching 'goal'. Matching of probe and goal induces 'Agree', eliminating uninterpretable features that activate them.

[10] The subject of the adverbial clauses may be overt. To satisfy Case theory, I assume that the overt subject of verbless adverbial clauses receives a 'default' Case, for instance, an accusative Case in English (Schütze (1997)). Although it is not too easy to construct an absolute clause with an accusative subject (without any complementizers) to demonstrate the default Case, examples from English gerunds like (i) may serve this purpose. Thanks to Carson T. Schütze for helpful discussion on these issues.

(i)   [Us having just eaten], no one wanted to go swimming.

4.2 Null Verbs and Economy

I have argued that verbless adverbial clauses in Chinese are not simple nominal phrases. There are V and its extended projections TP and CP in the structure. The head of VP in verbless adverbial clauses is a phonetically null verb, whose interpretation is equivalent to the copula *shi* 'be'. Having a phonetically null verb is a property that both Chinese adverbial clauses and English absolute clauses share.

If my analysis is correct, why is it the case that the verb is phonetically null in verbless adverbial clauses? To account for the existence of null verbs, I claim that Universal Grammar is subject to an economy principle, as formulated in (49).

(49)   Phonological structure is constructed minimally.

The claim in (49) is not new. Similar ideas are known as 'economy of representation' (Chomsky (1991)), '*STRUC' (Prince and Smolensky (1993)), and 'economy of lexical insertion' (Arnold (1997)). A minimalist assumption is that phonetic features are required only when necessary in human languages. 'If humans could communicate by telepathy, there would be no need for a phonological component, at least for the purposes of communication; and the same extends to the use of language generally' (Chomsky (1995:221)).

To implement (49), we may assume with the Distributed Morphology that phonetic features are supplied in the phonological component by an operation called 'Vocabulary Insertion' (Halle and Marantz (1993, et seq)). If such an operation in the phonological component is costly, having phonetic features is not economical at all. Phonetically null verbs are more economical than overt verbs. The derivation which uses an empty verb will be favored over the derivation which has an overt verb. The choice of null verbs should always be the 'default' and 'unmarked' option. Consequently, empty categories should always be preferable!

The existence of empty verb sentences like those in (50) and (51) in Chinese may further support the economy principle in (49).

(50)   Wo $\varnothing$ liang-bu diannao.
        I   two-Cl   computer
        'I __ two computers.'
(51)   Wo $\varnothing$ haixian mian, ta $\varnothing$ niurou mian.
        I   seafood noodle he beef   noodle
        'I __ seafood noodles, and him beef noodles.'

The interpretation of the relation between the two nominals in these sentences depends on the context. For example, (50) could mean that 'I have

two computers', 'I bought two computers', 'I sold two computers', 'I saw two computers', etc., and the first clause in (51) could mean that 'I ordered seafood noodles', 'I ate seafood noodles', 'I like seafood noodles', 'I want seafood noodles', etc. The two nominals could have either a vague Agent-Theme relation, a vague Experiencer-Theme relation, or a vague possessive relation. The two nominals in these sentences are connected by a phonologically empty verb Ø underlyingly, whose interpretation relies on the contextual information (Tang (1998, 2001a)). The first nominal, such as *wo* 'I' in (50), is the external argument of the empty verb while the second nominal, such as *liang-bu diannao* 'two computers', is the internal argument of the empty verb.

Basically, the empty verbs in (50) and (51) could be 'recovered'. In certain appropriate contexts, (52) and (53) could be regarded as paraphrases of (50) and (51), respectively.

(52)   Wo mai-le   liang-bu diannao.
       I   buy-Perf two-Cl   computer
       'I bought two computers.'
(53)   Wo yao haixian mian, ta yao niurou mian.
       I   want seafood noodle he want beef   noodle
       'I want seafood noodles, and him beef noodles.'

What is the major difference between these two sets of sentences in Chinese? Given that they are synonymous in a particular context, the only difference is perhaps the choice of the speaker. To native speakers' intuition, it seems that verbs can be omitted when the contextual information is rich enough. Without affecting the basic meaning, the option of omitting the verbs seems to be a 'convenient' and more 'colloquial' way to express ideas in native speakers' communication.

Let us assume with Shi (2001) that old information and new information can be represented as a set of 'constants' and a set of 'variables', respectively. To avoid repetition in a discourse, constants tend to be omitted and dropped. Only variables, which are also regarded as 'residues of reduction', remain, carrying new information (Shi (2001)). Suppose that the verb represents old information in a discourse with rich contextual information. To avoid repetition, the verb will be omitted and thus an empty verb sentence is derived. The two nominals in the empty verb sentences become the variables representing the new information that the speaker wants to convey in the discourse. If ambiguity arises, (50) and (51) are definitely avoided. In other words, (50) and (51) will never be used in an out-of-the-blue context. In terms of economy, if it is permitted by the discourse, a more economically strategy, i.e. to avoid inserting phonetic features by a costly operation such as 'Vocabulary Insertion', is always preferred, conforming to the economy principle advocated in this article.

Suppose that the economy principle in (49) is correct. Now the burden of proof is on the requirement of overt verbs. Why do we need phonetic features in the first place? The reasons are not trivial at all. A plausible explanation I can think of is that the computation system has the responsibility to provide sufficient and appropriate information and instructions to the external systems lest ambiguity arises. Having an overt form is an alternative. The overt elements, however, are manipulated as minimum as possible, subject to economy principles. To explain why overt elements can help, perhaps we need to deal with some fundamental questions that have puzzled linguists for a long time: Why do we need a phonological component? How do phonology and semantics interact with each other in our language faculty as well as in the performance systems?

To some extent, the economy property exhibited by the choice of empty categories seems to be quite 'global' and perhaps is a question of the intention of the speaker. Although Chomsky (1995:227) comments that there is no meaningful question as to why one numeration is formed rather than none so that we have silence, it is not a trivial question at all if we take the concept of economy outlined in the Minimalist Program seriously. We cannot deny that some sort of economy still enters into determination of the numeration itself in certain way. As also pointed out by Chomsky in the same paper, an object that enters the derivation must have an effect on output (Chomsky (1995:294)). Consequently, if certain phonetic features will not play a role and are kind of 'redundant' at the interfaces, they should be barred. Along these lines, it is not a crazy idea to regard telepathy as a 'perfect' language if sounds are not needed for communication (see, for instance, Chomsky (1995:221)).[11]

Needless to say, all these issues are related to how we look at the language faculty and should go beyond the scope of this article. Due to limited space, I am unable to investigate the interaction between syntax (core computation of human language C_{HL}) and the performance systems in detail here and leave all these questions for my on-going research.

5 Concluding Remarks

In this article, I have first explored various properties of the verbless adverbial clauses in Chinese. I have argued that verbless adverbial clauses are not really 'verbless'. There should be a phonetically null verb and its extended projections like TP and CP in the structure.

Furthermore, I have argued that verbless adverbial clauses are not unique in Chinese. Some of their properties can also be found in absolute clauses in

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[11] See also Prince and Smolensky (1993) for a similar spirit in terms of the Optimality theoretical approach.

English. Particularly, a phonetically null verb is permitted in both Chinese and English.

Based on the existence of the phonetically null verb, I have claimed that phonological structure is constructed minimally. A consequence of this claim is that phonetically null verbs should always be preferable. Verbless clauses should be 'unmarked' in natural languages.

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