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Shā–Z

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Syntax, Premodern

→ Classical Chinese; → Ergativity in Classical Chinese; → Historical syntax; → Medieval Chinese Syntax; → Old Chinese Syntax: Basic Word Order; → Old Chinese Syntax: The Left Periphery; → Shāng 商 Chinese; → Warring States to Medieval Chinese; → Wh-questions, Premodern; → Yě 也 in Classical Chinese

Syntax-Phonology Interface

The study of the interface between syntax and phonology is a new area in modern linguistics. The term phonology in this interdisciplinary study specifically refers to prosody; it is therefore sometimes called *prosodic syntax*, i.e., the study of how syntax is constrained by prosody.

Prosody mainly concerns suprasegmental phenomena such as mora/syllable weight or length, stress, intonation, rhythm, etc. in natural speech (Lieberman 1975). Although prosody can affect the meaning of an utterance (with different stress on different elements in a sentence or phrase, for example), not until recently has it been considered to affect syntax (i.e., the structure of the sentence).

In 1990 Zec and Inkelas first brought up the new idea of prosodically constrained syntax, which allows prosodically ill-formed sentences to be ruled out by a filter-like model in an interface

system between syntax and prosody. Following the same line of thinking, Feng (1991) provided some evidence from Chinese for how prosody affected syntactic changes in Old Chinese. From that time on, more and more intriguing Chinese data (from both modern and classical Chinese) have come to light and more and more linguists have become involved in this new area of study, and so arose the commonly used term *prosodic syntax* in Chinese linguistics. A preliminary statistic on publications in the area of *prosodic syntax* in Chinese linguistics shows that there were only 16 articles published before 1990, but by the year 2010 more than 70 had appeared in peer-reviewed journals in China.

1. FACTS CONCERNING PROSODIC SYNTAX IN CHINESE

Over the past twenty years, the investigation of how prosody has constrained syntax has accumulated a rich body of evidence, as exemplified below.

First, as observed in Lü (1963), Lu and Duanmu (1997 [1990]), and Feng (1995), there is a general prosodic constraint in Chinese verb-object (VO) structures: the object cannot be monosyllabic if the verb is bisyllabic. Examples are given in (1a), and apparent exceptions in (1b) and (1c).

No one has denied the prosodically attributed ungrammaticality of the classic examples

- | | | | |
|-------|--|---|---|
| 1. a. | 種樹
zhòng shù
'plant trees' | *種植樹
*zhòngzhí shù
'plant trees' | 種植樹木
zhòngzhí shùmù
'plant trees' |
| | 讀報
dú bào
'read newspaper' | *閱讀報
*yuèndú bào
'read newspaper' | 閱讀報紙
yuèndú bàozhǐ
'read newspaper' |
| | 買書
mǎi shū
'buy books' | *購買書
*gòumǎi shū
'buy books' | 購買書籍
gòumǎi shūjí
'buy books' |
| b. | 他喜歡錢。
Tā xǐhuan qián.
3SG like money
'He likes money.' | | |
| c. | 人害怕鬼。
Rén hàipà guǐ.
people be.afraid.of ghost
'People are afraid of ghosts.' | | |

in (1a). The exceptions are arguably conditioned by other factors, for example, the second syllable of the verb is neutralized in standard Mandarin (the grammatical judgment on (1b) and (1c) are thus marginal for speakers of other dialects that have no neutral tones) (Feng 1995).

The effect of prosodically constrained syntax in Chinese can also be seen in the well-known → *bǎ* 把-construction, as follows.

2. a. 請你把燈關閉/*關。
 Qǐng nǐ bǎ dēng
 please 2SG OBJM light
 guān-bì/*guān.
 close-close/close
 ‘Please turn off the light.’
 a’. 我們已把敵人包圍/*圍。
 Wǒmen yǐ bǎ dírén
 1PL already OBJM enemy
 bāo-wéi/*wéi.
 surround-surround/surround.
 ‘We already surround the enemy.’

Another type of prosodically constrained syntax newly reported in the literature involves a more complex structure. A sentence in Chinese can be structured with an outer object (NP) occurring immediately after the “verb plus object” constituent, forming a [Subj [[V+O] NP]] sentence (Féng 2002). For example:

3. a. 這個工作你負什麼責？
 Zhè-gè gōngzuò nǐ fù shénme
 this-CLF job 2SG take what
 zé?
 responsibility
 ‘What kind of responsibilities are you taking on in this job?’
 a’. 他負責保衛工作。
 Tā fù-zé (V-O) bǎowèi
 3SG take-responsibility security
 gōngzuò (Outer Object).
 job
 ‘He is responsible for the security job.’
 b. 吸煙有害身體。
 Xīyān yǒu hài (V-O)
 smoke have harm
 shēntǐ (Outer Object).
 body
 ‘Smoking harms (one’s) health.’

- b’. 吸煙有什麼害？
 Xīyān yǒu shénme hài?
 smoke have what harm
 ‘What kind of harm does smoking cause?’

Both *fù-zé* 負責 ‘take responsibility’ and *yǒu-hài* 有害 ‘have harm’ can be used as a VO compound ((3a) and (3b)) or a VO phrase ((3a’) and (3b’)). However, when the inner object (*zé* 責 ‘responsibility’) is disyllabic, i.e., *zérèn* 責任, a synonym of *zé* as seen in (4), the result is ungrammatical. The same is true for other VO forms such as (3b), unexceptionally.

4. a. *負責任保衛工作。cf. (3a’)
 *Fù zérèn (V O) bǎowèi
 take responsibility security
 gōngzuò (Outer Object).
 job
 b. *吸煙有傷害身體。cf. (3b’)
 *Xīyān yǒu shānghài (V O)
 smoke have harm
 shēntǐ (Outer Object).
 body

The ungrammaticality of (4) is doubtlessly caused by prosody because the sentence becomes grammatical if the outer object is preposed:

5. a. 他[對保衛工作]負責任。
 Tā [duì bǎowèi gōngzuò] fù
 3SG to security job take
 zérèn.
 responsibility
 ‘He is responsible for the security job.’
 b. 吸煙[對身體]有傷害。
 Xīyān [duì shēntǐ] yǒu shānghài.
 smoke to body have harm
 ‘Smoking harms (one’s) health.’

The only difference between *fù-zé* and *fù zérèn*, *yǒu-hài* and *yǒu shānghài* 有傷害 is that the former VO forms are disyllabic while the latter ones are trisyllabic. This fact gives rise to a well-tested generalization in Chinese prosodic syntax: only disyllabic VO forms can take an outer object, a prosodic restriction called *Prosodic Constraint on VP Syntax* (henceforth PCVP).

Many VP structures are related to this constraint. A structure now frequently used in

relatively formal occasions exhibits the same prosodic effect, for example.

6. *informal*: 武松在景陽岡打虎。

Wǔ Sōng zài Jǐngyáng gǎng
Wǔ Sōng on Jǐngyáng hillock
dǎ hǔ.
beat tiger
'Wǔ Sōng beat a tiger on the
Jǐngyáng hillock.'

formal: 武松打虎景陽岡。

Wǔ Sōng dǎ hǔ Jǐngyáng
Wǔ Sōng beat tiger Jǐngyáng
gǎng.
hillock
'Wǔ Sōng beat a tiger on the
Jǐngyáng hillock.'

The syntax of the above sentences is simply to replace the preposition *zài* 在 'at' with the VO constituent *dǎ hǔ* 打虎 'beat tiger', yielding a synthesized structure $[[VO] NP_{place}]$, where the place-object (*Jǐngyáng gǎng* 景陽岡) of the preposition looks like an outer object of the VO (*dǎ-hǔ* 'beat tiger'). According to the generalization of PCVP given above, if the VO is formed with more than two syllables, then the synthesized structure will be ungrammatical. This is borne out as a strict rule for the $[[VO] NP_{place}]$ structure as in the following examples:

7. *武松打老虎景陽岡。

*Wǔ Sōng dǎ lǎohǔ Jǐngyáng gǎng.
Wǔ Sōng beat tiger Jǐngyáng hillock
'Wǔ Sōng killed a tiger on the Jǐngyáng hill-
ock.'

The most popular syntactic structure in Chinese, namely the verb-resultative (VR) construction, is also affected by prosody. A verb in Chinese can take an adjective as its complement to form a verb-resultative compound, and the VR compound can in turn take an object NP forming a standard VR construction. For example,

8. a. 你要想透這個問題。

Nǐ yào xiǎng tòu zhè-ge
2SG should think thorough this-CLF
wèntí.
question

'You should think thoroughly about this question.'

a'. 學語言要打牢基礎。

Xué yǔyán yào dǎ láo
learn language need hit solid
jīchǔ.
foundation
'One needs to lay a solid foundation when
studying a language.'

The interesting fact concerning prosody in the [VR O] structure is this: when there is an object NP after the VR, the verb cannot take a disyllabic resultative complement, even if the disyllabic resultative complement is a synonym of its monosyllabic counterpart. For example,

9. a. *你要想透徹這個問題。 cf. (8a)

*Nǐ yào xiǎng tòuchè zhè-ge
2SG should think thorough this-CLF
wèntí.
question

b. *學語言要打牢固基礎。 cf. (8b)

*Xué yǔyán yào dǎ láogù
learn language need hit solid
jīchǔ.
foundation

There is an exception: when the second syllable of the disyllabic resultative complement is neutralized, that is, the second syllable is atonicized, meaning the disyllabic adjective is not as heavy as two full-tone syllables, the sentence is acceptable. For example,

10. a. 張三想明白了這個問題。

Zhāng Sān xiǎng míngbai le
Zhāng Sān think understand ASP
zhè-ge wèntí.
this-CLF question
'Zhāng Sān understood this question (by
thinking).'

b. 張三沒看清楚黑板上的字。

Zhāng Sān méi kàn qīngchū
Zhāng Sān not see clear
hēibǎn shàng de zì.
blackboard top SUB character
'Zhāng Sān did not clearly see the charac-
ters on the blackboard.'

Although no serious research has been conducted on grammatical judgment of (10) by speakers from dialects without tonal-neutralization, it is clear that in all of the acceptable cases of the [VR O] structure, the second syllable of the disyllabic resultative complement is neutralized. Nevertheless, the ill-formed and the exceptional cases are all subject to a prosodic constraint in standard Mandarin. And the prosodically disallowed structure *[V-RR NP] ('RR' refers to a disyllabic resultative complement) is syntactically well-formed if the object NP is proposed (via *bǎ*-construction for example):

11. a. 你要把這個問題想透徹。
 Nǐ yào bǎ zhè-ge wèntí
 2SG should OBJM this-CLF question
 xiǎng tòuchè.
 think thorough
 'You should think thoroughly about this question.'
- b. 學語言要把基礎打牢固。
 Xué yǔyán yào bǎ
 learn language need OBJM
 jīchǔ dǎ láogù.
 foundation hit solid
 'One needs to lay a solid foundation when studying a language.'

2. THE GOVERNMENT-BASED NUCLEAR STRESS RULE

So far, what we have seen from the above examples is that prosody interacts with [VO/R NP] syntax, which can be reduced to a simple VP constraint. In other words, if the V + Complement (including object, resultative complement, and PP complement that are required by the verb) is too heavy (i.e., the [V+Complement] is over three syllables long), then no extra constituent is allowed after the V(erb)+C(omplement) unit. This prosodic constraint brings up a previously observed and well-known, though bizarre behavior of Chinese syntax first formulated by Huang (1982) as a *Phrase Structure Constraint*: No two constituents are allowed after the main verb. The typical example is as follows.

12. *瑪麗學了中文三年。
 *Mǎlì xué le Zhōngwén sān nián.
 Mary study ASP Chinese three year
 'Mary studied Chinese for three years.'

To avoid the violation of two constituents (*Zhōngwén* 中文 and *sān nián* 三年) after the verb, the sentence can be rendered grammatical via a variety of structural transformations (syntactic operations), such as:

13. By verb reduplication 瑪麗學中文學了三年。
 Mǎlì xué Zhōngwén
 Mary study Chinese
 xué le sān nián.
 study ASP three year
 'Mary studied Chinese for three years.'
- By topicalization 中文, 瑪麗學了三年。
 Zhōngwén, Mǎlì xué
 Chinese Mary study
 le sān nián.
 ASP three year
 'As for Chinese, Mary studied it for three years.'
- By the *bǎ*-construction 瑪麗把中文學了三年。
 Mǎlì bǎ Zhōngwén
 Mary OBJM Chinese
 xué le sān nián.
 study ASP three year
 'Mary studied Chinese for three years.'
- By adding *de* 的 瑪麗學了三年的中文。
 Mǎlì xué le sān
 Mary study ASP three
 nián de Zhōngwén.
 year SUB Chinese
 'Mary studied Chinese for three years.'

Why is Chinese syntax doing this? Within the proposed prosodic constraint outlined above, the *Phrase Structure Condition* can be explained in terms of the *Prosodic Constraint on VP Syntax* in Chinese. Following Liberman (1975), Feng (1995) proposes that the Nuclear Stress of a sentence is, informally speaking, assigned

by the verb to its mutually c-commanded (i.e., directly governed) complement, termed the *Government-based Nuclear Stress Rule* (G-NSR, for short). Since there is only one primary stress per sentence, only the directly governed complement gets the nuclear stress; the second constituent after the verb (or the complex verb V+C) is not allowed prosodically due to the lack of a proper stress in the sentence.

The G-NSR so proposed is supported by a cluster of facts. First, when the complement of a verb is inherently weak (a pronoun like “it” for example), then the second constituent is perfectly allowable after the verb because weak forms generally do not receive stress. For example,

14. a. 瑪麗學了它三年。
 Mǎlì xué le tā sān nián.
 Mary study ASP 3SG three year
 ‘Mary studied it for three years.’
 b. 瑪麗想了她三年。
 Mǎlì xiǎng le tā sān nián.
 Mary miss ASP 3SG three year
 ‘Mary missed her for three years.’

Another prominent syntactic phenomenon in Mandarin directly affected by the G-NSR is the [V [P NP]] structure as seen in the following.

15. a. 那本書，他放在了桌子上。
 Nèi běn shū, tā fàng zài le
 that CLF book 3SG put on ASP
 zhuōzi shang.
 table top
 ‘As for that book, he put (it) on the table.’
 b. *那本書，他放在了桌子上。
 *Nèi běn shū, tā fàng le zài
 that CLF book 3SG put ASP on
 zhuōzi shàng.
 table top

According to the *Phrase Structure Constraint* seen above, a complement PP appearing after a main verb should be grammatical because there is only one constituent after the verb. However, as seen in (b) the organization of [V+PP] is not acceptable if the verbal suffix *le* 了 (an aspectual

marker) occurs after the verb and before the PP. The question thus is why the verbal suffix *le* must occur after the P and more specifically, is there some inherently syntactic constraint involved?

We now look at what syntax must do in order to save the syntactically ill-formed [V-**le* [PP P NP]]: it is very strange, in the sense that the preposition *zài* is incorporated into the verb and the aspect marker *le* (standardly attaches to the verb) attaches to the P within the “verb complex” [V-P], yielding an odd yet well-formed [V-P-*le*] in Chinese syntax. What motivates the P to attach to the V and the *le* to P? Prosodic syntax provides a very good reason why this must be so. Recall that the G-NSR demands that the Nuclear Stress be assigned to a complement directly governed by the verb. However, the object of prepositions is directly governed by P, not V; as a result, the Nuclear Stress cannot be assigned to the NP by V unless the P is moved out of the way. Unfortunately, there is no syntactic operation to move a P to a topic position (like an object), but fortunately, incorporation of P into V is a perfect head-to-head movement in syntax, as is the result of [V-P_i-*le* [PP t_i NP]]. Obviously, the P-incorporation is an available syntactic operation in UG syntax (i.e., a part of universal grammar) and it is activated particularly in Chinese by the needs of prosody (i.e., the G-NSR).

The VP syntax in Chinese as seen above is heavily affected by NSR. Thus, prosody must be considered as part of the grammar not only ruling out prosodically ill-formed, though syntactically acceptable, sentences, but also activating relevant syntactic operations in order to meet the prosodic requirements.

As seen above, there have been different approaches to some but not all of the structures discussed here. For example, Huang (1994) has proposed a syntactic light verb structure to deal with the examples given in (12) while Li (1990) used Case theory to explain why aspect *le* attached to P in (15b). However, no explanations have been given as to why [V+N NP] in (7) and [VR NP] in (9) are ungrammatical syntactically. On the other hand, given the theory of prosodic syntax and the facts in Chinese, it is clear

that the interaction between prosody and syntax is bidirectional: Syntax influences prosody (for example [wǒ [chī fàn]] 我吃饭 'I eat food' must first be grouped as a prosodic unit with the verb and the object syntactically), and prosody also affects syntax, as seen in this article. Furthermore, based on the ample evidence of *prosodic syntax* from modern as well as classical Chinese (i.e., prosodically motivated syntactic changes in classical Chinese, see Feng 1998), it is highly plausible to consider that prosody functions as a kind of morphology which not only affects the size and pattern of morphological units (compounding for example, → Disyllabification and → Prosodic Morphology), but also motivates syntactic operations both synchronically and diachronically.

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Shengli Feng

Systemic Linguistics

Systemic Functional Linguistics (SFL), formulated most noticeably by M.A.K. Halliday (1976, Halliday and Matthiessen 2004/2008), views language as a system of choice of meaning, that means "[a] language is a resource for making meaning, and meaning resides in systemic patterns of choice" (Halliday and Matthiessen 2008:23). Three kinds of metafunctions, that is, meanings in three modes, are defined in SFL: ideational, interpersonal, and textual. The ideational metafunction construes human experience; the interpersonal metafunction provides choices of enacting personal and social relationships between people; and the textual metafunction relates to the construction of text. In terms of SFL, "the grammar of a language is represented in the form of system networks, not as an inventory of structures" (Halliday and Matthiessen 2008:23).

SFL was introduced into China in the late 1970s. A comprehensive presentation of SFL was given by Hú *et al.* (1989). Since then, there has been a large number of publications in this field. These studies have shown that as one of the theories of general linguistics, SFL is applicable not only to English, but also to Chinese. Although the systemic network of English grammar interpreted by Halliday and Matthiessen (2004/2008) can be shared by Chinese, some systems involved in differences between the two languages need to be adapted for Chinese grammar.