Readings in
Chinese Transformational Syntax

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CHINESE AS A SOV LANGUAGE

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1. INTRODUCTION

Chinese exhibits in surface structure both SVO and SOV word order. In the literature of transformational Chinese syntax, it has been assumed that the underlying order for Chinese is SVO, and the SOV order is derived through a rule of object preposing. In this paper, I would like to argue that Chinese has SOV as the underlying order, SVO being derived from SOV through a rule of NP-V inversion. This rule can be stated as:

\[
\# X - NP - V \# \quad \Rightarrow \quad \# X - V - NP \#
\]

It will be seen that the present theory is based on two grounds. First, it is able to simplify the grammatical description of Chinese by eliminating otherwise necessary language-specific rules and constraints. Second, it is capable of providing an explanation of great value for a large number of syntactic differences with respect to word order between Chinese and English on one hand and similarities in word order between Chinese and Japanese on the other hand.

2.1. The rule of NP-V inversion.

For the purpose of discussion, we will refer to a grammar of Chinese which assumes SVO underlying order as grammar A, and to the one which assumes SOV underlying order as grammar B.

No matter if we adopt grammar A or grammar B, the rule of NP-V inversion is needed in order to account for the fact that the indefinite subject of some intransitive verbs can be moved to the rear of the predicate (as illustrated in (1) and (2)).

(1) a. you sange keren laile
    (there) (three) (guests) (come-asp.)
    Three guests have come.

b. laile sange keren

(2) a. you sange keren zoule
    Three guests have left.

b. zoule sange keren

The rule of NP-V inversion is also needed in both grammar A and grammar B to account for the fact that the governing noun of a genitive construction can be moved to the rear of an intransitive verb when the genitive marker de is dropped (as shown in (3) or (4)).
In both grammars, the rule of NP-V inversion is also needed to account for the fact that the underlined NP in sentences like (5) a can be postponed to the rear of an intransitive verb.²

(5) a. wuge pingguo li sange lanle (five) (apple) (inside) (three) (rotten)
   Of the five apples, three are rotten.

In grammar A, (6a) is the basic form. eded are a rule to prepose the object to the front of the verb to get sentences like (6b), and a passive rule which will take the object to the beginning of a sentence to render sentences like (6c).³ In grammar B, however,
(6b) is the basic form. To get (6a), we can make use of the rule of NP-V inversion, and thus the rule of preposing the object to the front of the verb can be removed.

Although the passive rule is needed in both grammars, it can be shown that while the passive rule in grammar A has to be treated as a language-specific rule in Chinese, the passive rule in grammar B can be regarded as identical to that of English. The argument is based on an analysis in which the passive rule in both languages can be considered as essentially involving the change of SO order into OS order, which is presumably a plausible universal characterization of the process of passivization. In contending that English has VSO underlying order, McCawley (1970) argues that the passive rule in English moves the subject to the end of the clause, and the object will then automatically follow the verb directly and finally become surface subject by a rule of V-NP inversion. Thus, in McCawley's analysis, the passive rule of English is a process which takes the subject to the end of the clause, McCawley's analysis can, however, achieve the same goal, if we assume that the rule of passive in English involves the change of SO order into OS order before the rule of V-NP inversion applies. If so, we can further assume that Chinese and English have the same passive rule, which is essentially a process of switching the order between subject and object. This kind of assumption is only compatible with grammar B, and not with grammar A.

2.3. The ordering relation between the relative clause and the head noun.

In most cases, a Chinese relative clause is ordered before the head noun in surface structure with de as a relative marker.

(7) xihuan meigu dianying de neige niuhazi shi wo meimei.
   (like) (American) (movie) (de) (that) (girl) (be) (my) (younger sister)
   The girl who likes American movies is my younger sister.

However, when the head noun is indefinite and in a predication built on the existential verb you, the relative clause can follow the head noun with de marker omitted. This can be exemplified by (8b).

(8) a. wo you yige xihuan meigu dianying de meimei
   I have a sister who likes American movies.

b. wo you yige meimei xihuan meigu dianying

Given (7) and (8), one can have two alternatives. One alternative is to assume that the relative clause in Chinese is ordered before the head noun in underlying structure and is reordered after the head noun by a transformation rule in the case of indefinite head nouns in a predication with you as the main verb. The other alternative is to do just the reverse.
The phenomenon of pronominalization in Chinese seems to favor the second alternative. Unlike English, Chinese doesn't allow backward pronominalization under any condition. (9)-(11) sentences show that pronominalization cannot apply backward in Chinese, even if two referential noun phrases are in the relationship of "command".5

(9)  

a. Zhangsan likai zher yihou, ta jiu mei zai hui-lai guo  
After John left here, he never came back again.

b. *ta likai zher yihou, Zhangsan jiu mei zai hui-lai guo

(10)  

a. Zhangsan zoujin fangzi de shihou, wo dale ta  
When John entered that house, I hit him.

b. *ta zoujin fangzi de shihou, wo dale Zhangsan

(11)  

a. wo zhaodao Zhangsan de shihou, ta yijing sile  
When I found John, he was already dead.

b. *wo zhaodao ta de shihou, Zhangsan yijing sile

To account for the pattern of pronominalization in sentences (9)-(11), it seems reasonable to assume that the rule of pronominalization in Chinese applies only forward, and not backward. This general assumption, however, has to take exception in the case of pronominalization in relative clauses. In Chinese, if a noun phrase within the relative clause is co-referential to the head noun and cannot be deleted by the head noun, it must be pronominalized.6 This is exemplified by sentences (12)-(14).

(12) zuotian wo dale ta yidun de neige nanhaizi shi wo didi  
The boy whom I hit yesterday is my younger brother.

(13) wo geile ta yiben shu de neige nanhaizi shi wo didi  
The boy to whom I gave a book is my younger brother.

(14) ta muqin hen gao de neige nanhaizi shi meiguo ren  
The boy whose mother is very tall is American.

(12)-(14) sentences show that the rule of pronominalization has to apply backward in Chinese relative clause formation, if the relative clause is ordered before the head noun at the time the rule of pronominalization applies.

The generalization can be held that Chinese pronominalization applies only forward, if we assume that a Chinese relative clause is ordered after the head noun in underlying structure and that after the rule of pronominalization has applied, the relative clause is then preposed to the front of the head noun. This solution is obviously more desirable than the
one which assumes that pronominalization applies backward only in the case of relativization. Bach (1965) has proposed a rule of relative clause preposing

\[(15) \quad X + \text{Noun} + \text{Rel} + Y \rightarrow 1 + 3 + 2 + 4\]

He has suggested that it is not necessary to state rule (15) for individual languages, for the general linguistic theory would provide a law-like statement to the effect that if the verb is at the end of the clause, then rule (15) must obligatorily apply. Thus, if we assume that Chinese is a SOV language in underlying structure, we need not state rule (15) in the Chinese grammar. It must be noticed that the assumption that Chinese is an underlying SOV language is able to reduce the complexity of description of the Chinese grammar in three important ways. First, it simplifies the description of pronominalization in Chinese. Second, it eliminates a rule of relative clause postposing, which would otherwise be necessary for the Chinese grammar in order to derive sentences like (8b). Third, and most importantly, there is no more need to state the order relationship between the relative clause and the head noun in the underlying structure of a Chinese grammar, since it can now be assumed that in every language, the relative clause follows the head noun.

3. It has been observed in Greenberg (1963) and other works on linguistic typology that languages with SOV as the dominant word order tend to have the following features of word order:

\[(16) \quad \begin{array}{ll}
A. & \text{relative clause before noun} \\
B. & \text{adjective before noun} \\
C. & \text{genitive before the governing noun} \\
D. & \text{adverbial before the main verb} \\
E. & \text{adverb before adjective} \\
F. & \text{proper noun before common noun} \\
G. & \text{identical order for question and statement} \\
H. & \text{final particle for yes-no question} \\
I. & \text{postpositional} \\
J. & \text{standard before marker before adjective in comparative constructions}
\end{array}\]

Regardless of the fact that these grammatical features are defined on the level of surface structure, they can still be considered as heuristics for the present discussion. For two reasons, first, they consistently appear in rigid SOV languages such as Japanese and Turkish. Second, their occurrence and co-occurrence in SOV languages can be accounted for either in terms of some very obvious conceptual generalizations or in terms of some syntactic
evidence within the framework of transformational grammar. Thus, (A)–(F) can be
generalized under one single general syntactic principle to the effect that SOV languages
tend to place restricting elements before restricted elements.8 This principle can account
for the order of SOV itself, since the subject is restricting the predicate and the object is
restricting the main verb.

(G) concerns the absence of two related grammatical features of questions which exist
in languages like English. They are the fronting of question words and the subject-auxiliary
inversion in yes-no questions. The absence of question-word movement in SOV languages
has been explained by Baker (1970) and Bach (1971a). Their explanations are based
essentially on two assumptions: (1) for every question, there is a higher governing interroga­tive verb, (2) the movement of question words is toward the governing interrogative verb
on the left of the sentence. From assumption (1), it is reasonable to further assume that
SOV languages have interrogative verbs at the end of a sentence. This further assumption
in conjunction with assumption (2) provides an explanation for the absence of question­word movement in SOV languages. They have not provided an explanation for the fact
that the fronting of question-words and the subject-auxiliary inversion in yes-no questions
tend to be present or absent as a pair. Based on the fact that in English the subject-auxiliary
inversion occurs not only in yes-no questions but also in Wh-questions, we can make a
further assumption that the subject-auxiliary inversion is dependent on the movement of
question words. The absence of subject-auxiliary inversion in SOV languages thus follows
from the absence of the movement of question words.

In all SOV languages studied in Greenberg’s survey, there seems to be a very clear
correlation between (G) and (H). This correlation can be explained, if we adopt those
assumptions about questions made by Baker (1970) and Bach (1971a) and further assume
that final question particles in SOV languages are realizations of governing interrogative
verbs.9

The presence of postpositions rather than prepositions in SOV languages can also be
explained within the framework of transformational grammar. Sanders (1972) has argued
that prepositions and postpositions are derived from underlying predicates by copying
the underlying predicate to the noun phrase and deleting the original predicate. We can
further impose a constraint on copying to the effect that when an underlying predicate
is copied to a noun phrase, it cannot be copied to the side of the noun phrase which is
opposite to the original predicate. This constraint on copying allows only (a) and (b)
copying, and not (c) and (d).
Thus, if we adopt Sanders' arguments and the proposed constraint on copying, we can explain the fact that languages with SOV order are postpositional.

As to the \( (J) \) feature, while the order of standard before marker is analogous to that of noun before postposition, the order of comparative phrase (standard together with marker) before adjective is parallel to that of adverb before adjective. The presence of \( (J) \) feature in SOV languages can therefore be explained as long as \( (D), (E), \) and \( (I) \) features in SOV languages can be explained.

4. If we examine the word order in Chinese with these grammatical features listed in (16), we find that Chinese has all of the properties of a SOV language except that in most cases it has apparent prepositions rather than postpositions. In addition, Chinese has a marker-adjective order in comparative constructions. This deviation of Chinese comparatives from those of ordinary SOV languages can be considered as due to the existence of apparent prepositions in Chinese, for the phrase of marker-standard behaves like the so-called prepositional phrase in Chinese. The order of marker-standard requires, therefore, the same explanation as the order of preposition-noun.

Chinese has long been recognized as a language which is prepositional. The underlined phrase in (18) can serve as an example:

(18) ta gen Zhangsan laile
(he) (with) (John) (came)
He came with John.

However, in locative phrases, Chinese seems to have postpositions rather than prepositions. Consider

(19) ta zai fangzi litou
(he) (locate) (house) (inside)
He is inside the house.

(20) ta zai fangzi litou ku
(cry)
He is crying inside the house.

"zai" in (19) and (20) has often been interpreted as a preposition. It is clear from examples like (19) and (20) that "zai" is only a general locative marker, and that the selection of specific locations are determined by postpositions.
The peculiarity of Chinese locative constructions can be excellently explained within the framework of the proposed theory that Chinese is a SOV language with a rule of NP-V inversion. The deep structure of (19) can be represented as

(21)

if we follow Sanders' (1972) approach of deriving prepositions and postpositions, (21) will first be converted to (22) by the rule of Copying.

(22)

The deletion rule, which in general applies to delete the source, will in this case delete all but the grammatical feature (+ location) of the source, which is later lexicalized as "zai." The result is

(23)

Now, the NP-V inversion rule will obligatorily apply to yield a sentence like

(24)

The locative adverbial phrase in (20) as the underlying higher predicate of the sentence "ta ku" (he is crying), can be derived in the same way. The derived structure of (20) in the present theory will look presumably like
Note that "zai" in (25) is represented as a verb. Similarly, (18) can be represented as

With derived structures like (24), (25), and (26), we are claiming that the so-called prepositional phrases in Chinese are in fact verbal phrases. This claim is indeed consistent with a number of grammatical features in Chinese. In the proposed theory, Chinese therefore has only postpositions such as "litou" in sentences (19) and (20).

It is clear that the rule of NP-V inversion must be post-cyclic and upward bounded so that the NP's in the inner sentence in (25) and (26) will not move all the way to the end of the main clause and render ungrammatical sentences such as

\[ (27) \] *wo zai ku fangzi-litou
\[ (28) \] *wo gen laile Zhangsan

These two restrictions on the NP-V inversion rule in English is also post-cyclic and the observation by Ross (1967) that all the rightward movement rules are upward bounded.

5. In addition to the presence of apparent prepositions, Chinese also differs from Japanese and Turkish in placing auxiliaries before the main verb. This is illustrated by

\[ (29) \] wo bu neng qu
(1) (not) (can) (go)
I can not go

I have argued elsewhere (Tai, 1971, forthcoming) that in Chinese there is a predicate place-
ment constraint which states that “if complement predicate A commands complement predicate B in underlying structure, A must precede B in surface structure.” This constraint accounts for not only the word order in (29) but also the placement of Chinese adverbials which can be derived from underlying predicates. The fact that Japanese and Turkish place auxiliaries after the main predicate and become agglutinative can be explained as due to the non-existence of the predicate placement constraint which Chinese has. That this constraint is independent of either verb-initial or verb-final languages is evidenced by the fact that neither Japanese nor English has this constraint.

6. Ross (1967) has observed that underlying SOV languages do not have rules which move verb to the left, nor rules which move elements rightward around a variable. The rule of NP-V inversion itself is a rule which moves verbs to the left. However, it is true that Chinese has no other rightward movement transformations than the proposed NP-V inversion rule. This observation is based on the fact that none of the rightward movement transformations found in English exists in Chinese. Thus, Chinese doesn’t have transformations such as Cleft-Formation, Complex NP Shift, It-Extraposition, Extraposition from NP, Extraposition from PP, and Particle Movement. Even if we assume that there is rule of Conjunct Movement, this rule doesn’t move the second conjunct to the right of the verb in Chinese. Obviously, this restriction in rightward transformations in Chinese is partly responsible for the dominant X-V-NP surface order in Chinese. Ross’ observation can therefore be restated as:

(30) Underlying verb-final languages cannot have rules which move elements to the right of verbs except the NP-V inversion rule.

In fact, it has been pointed out by Greenberg (1966) that Householder has reported that in most types of spoken Turkish, it is allowable to have a dative or locative noun phrase after the verb. Muraki (personal communication) has informed me that in some spoken Tokyo dialects, it is grammatical to have one noun phrase placed after the verb. It seems that underlying SOV languages can have one NP after the verb and the degree of NP-V inversion varies from the most rigid verb-final languages like Japanese to less rigid SOV languages like Chinese.

7. CONCLUSION

I have proposed that Chinese is a verb-final language with a rule of NP-V inversion which is post-cyclic and upward bounded. The assumption that Chinese is a verb-final language is necessitated by the fact that Chinese displays a system of word order which is highly similar to typical verb-final languages such as Japanese and Turkish. The dif-
ferences between Chinese and other verb-final languages with respect to word order can be accounted for as due mainly to the existence of the NP-V inversion rule in Chinese and partly to language-specific constraints in either Chinese or other verb-final languages.

McCawley (1970) has argued that English is a verb-initial language with a post-cyclic V-NP inversion rule. While McCawley's theory has captured the generalization that in surface structure English tends to have the verb second in all clauses, the theory proposed in this paper has captured the generalization that Chinese tends to have the verb next-to-last in all clauses. By assuming that Chinese is verb-final and English is verb-initial, we are able to account for the differences between these two languages with respect to those grammatical features we have discussed in sections 3, 4, 6. In fact, there are other grammatical differences between these two languages for which explanation can also be indirectly inferred from the assumption that Chinese is verb-final and English is verb-initial. For example, if we assume that adverbial clause connectives such as "when", "before", and "after" are derived from relative clauses of which the head noun is 'the time', we can also account for the fact that while in English these connectives stand at the beginning of the clause, in Chinese they are placed at the end of the clause.

Greenberg (1963) has classified languages of the world into three common types, based on the position of the verb in declarative sentences with nominal subject and object. They are respectively VSO, SVO, and SOV. Within the framework of transformational grammar, McCawley (1970) and Bach (1971b) have suggested that there are only two types of underlying order: verb-initial and verb-final, and that other surface word order types are derived from these two basic types through transformations. Although neither of them has spelled out exactly what facts of surface order are dependent on this difference in underlying order, it is understandable that the strongest version of their hypothesis is to assume that all languages have the same underlying order except that they can have either verb-initial or verb-final underlying order. If we assume, following the contention by the school of generative semantics, that grammatical categories in underlying structure consist essentially of S, NP, and V, we can adopt the following assumptions for the hypothesis of verb-initial and verb-final underlying orders.

(a) For all languages, the subject NP precedes the object NP in underlying structure.

(b) For all languages, the relative clause is embedded in underlying structure to the right of the governing head noun.

(c) As far as the underlying order is concerned, languages can only differ in that either they have verbs in the final position or in the initial position.
Differences in surface order across languages are derived from the very difference stated in (c) in conjunction with a very small number of independently motivated language-specific constraints and transformations.

It is within the framework of (a)–(d) working hypotheses that I have shown that Chinese is an underlying SOY language. If the present analysis of word order in Chinese is correct, then these hypotheses have also been shown to be empirically justifiable.

*I have benefited from discussions with Emmon Bach and Gerald Sanders. I am alone responsible for all possible errors.

FOOTNOTES

1. See Chao (1968) for detailed discussion.
2. See Cheng (1967) for detailed discussion.
3. This has, in fact, been the most prevailing view since the inception of transformational analysis of Chinese grammar in this country. William S-Y. Wang (1964) represents the earliest analysis in this line. Peter Chin-tang Wang (1970) has contributed a more elaborated analysis of ba and bei constructions along the same line.
4. Schwartz (1971) has also recognized this alternation in Chinese. Since it isn’t obvious why the alternative ordering like (8b) is restricted to predication with you, the validity of the transformational relation between (8a) and (8b) must be further investigated.
5. I am using the term “command” as it is defined by Langacker (1969).
6. See Sanders and Tai (1972) for detailed discussion of deletion and pronominalization in Chinese relative clause formation.
7. Although we have to state in the Chinese grammar that rule (15) applies optionally when the indefinite head noun is in a predication with you as the main verb.
8. Lehmann (1973) has proposed a general principle which states that “modifiers are placed on the opposite side of a basic syntactic element from its primary concomitant.” This principle is able to account for the fact that in SOV languages nominal modifiers such as relative clauses, adjectives, and genitive expressions precede nouns. It is not clear, however, that this principle can also cover (D)–(F) features in SOV languages.
As a matter of fact, if adverbials are considered as modifiers of the verb, they should be, according to Lehmann’s principle, placed on the right side of the verb in SOV languages rather than on the left side. Besides, Lehmann’s principle is a generalization which requires further explanation.

9. On the basis of data given by Greenberg (1966), there seems to exist an exceedingly close relation between the position of yes-no particles and the position of other interrogative words. On the one hand, VSO languages have an initial yes-no particle and likewise these languages put question words in sentence initial position. On the other hand, those SOV languages which have final particles for yes-no questions put them at the end of the sentence, and none of the SOV languages moves the question-words to sentence initial position.

10. It must be pointed out that in Chinese there are some adverbials placed after the main verb. However, these adverbials do not have the function of “modification”. I have argued elsewhere (Tai, 1971, forthcoming) that a Chinese adverbial must be placed before the main verb whenever it has the function of “modifying” the main verb.

11. For example, time adverbs and negatives are placed before the so-called prepositional phrases rather than before the main verb.

   (1) a. ta zuotian zai fangzi litou ku
       (yesterday)
       He cried in the room yesterday.
    b. *ta zai fangzi litou zuotian ku

   (2) a. ta mei zai fangzi litou ku
       (not)
       He didn’t cry in the room
    b. *ta zai fangzi litou mei ku (=2a)

12. Both Japanese and Turkish, like Chinese, put sentential adverbials which are derivable from underlying predicates before the main verb. Questions should be raised as to why adverbials are not put behind the main verb in Japanese and Turkish, since they can be represented in underlying structure as the same kind of linguistic objects as auxiliaries.

13. The fact that Chinese can have both direct and indirect objects placed after the verb seems to constitute a counterexample to this generalization.
REFERENCES


