INTERACTION AND EXPLANATION:
THE CASE OF VARIATION IN CHINESE VO CONSTRUCTION[*]

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ABSTRACT

Incorporating the concepts of competing changes (Wang 1969), modularity (Huang 1984, 1988), and grammatical interaction (Hsieh 1992a), this paper attempts another support for the claim that variation in structure is often the result of interaction between competing grammatical forces in history, and that competition may occur across modules (Hsieh 1989, Her 1994). We establish explicitly a typology of VO sequences in Mandarin Chinese: 1) word, 2) idiomatic phrase, 3) dual status--word and phrase, and 4) regular phrase, and interpret this variation of VO construction as the consequence of the interaction between two conflicting forces: lexicalization and ionization, of two distinct grammatical modules, lexicon and syntax, respectively.

0. BACKGROUND

A common approach in the scientific study of an elaborate intricate natural system is modularization, where the subject is factored into modular components to facilitate the separate study of individual components. Within this modular approach, the study of language has traditionally been factored into various largely autonomous components, such as phonology, morphology, syntax, semantics, etc. Although modularization diminishes interaction across components and optimizes interaction within components, in an integral system such as language, interaction across modules is necessary to provide a comprehensive account (e.g., Du Bois 1985, Her 1991a, Newmeyer 1991a, Sadock 1991), or, as Newmeyer (1991b:104) plainly states: '...a modular approach to language is one in which the autonomous systems, each governed by a simple set of elegant principles, interact to yield the observed complexity of language'.

Within the thesis of grammatical interaction put forth in Hsieh (1989, 1992a, 1992b) and Her (1992, 1993, 1994), synchronic structural variations are

considered the results of interaction between forces across modules. This view incorporates the two essential concepts, lexical diffusion and competing changes, of Wang's 'lexical diffusion hypothesis' (Wang 1969, Chen and Wang 1975) and further extends its applicability from diachronic phonology to virtually all areas of grammar. The lexical diffusion hypothesis maintains that a sound change, though phonetically abrupt, affects the applicable items in the lexicon in a gradual manner. Essentially, it recognizes that a sound change must take an extended period of time to complete; thus, before it reaches all the applicable lexical items, there may exist another concurrent sound change that competes for all or part of the same range of applicable lexical items in the language. Competing changes therefore may result in residue, or variation. The lexical diffusion hypothesis thus introduces two significant factors in linguistic changes: 1) the temporal duration of the course of a change and 2) the possible interference of other changes. Linguistic changes are thus only regular by default, and irregularity may occur when during the course of a change there is another change competing for all or part of the same domain of application.

Extending this concept of rule competition to the study of syntactic changes as well as variations of a synchronic grammatical construction, Hsieh (1989, 1992a, 1992b) derives a thesis of rule interaction, which holds that at any point in time, given a syntactic construction, grammatical rules applicable to this particular construction are engaged in a constant interaction of some sort. Variation or irregularity is viewed as the normal and natural consequence of such interaction. Thus, within such a view, the conventional distinction between irregularity in historical changes and variations in synchronic constructions is rendered superfluous.

In this paper, we assume the modularity of syntax and lexicon (Huang 1984, 1988) and offer an interactionist account of the variation of Mandarin VO construction and interpret this variation as the consequence of the interaction between the conflicting forces, lexicalization and ionization, of lexicon and syntax respectively.

1. TYPOLOGY OF VO SEQUENCES

Chinese linguists have long recognized the ambiguous status of certain verb-object (VO) sequences, e.g., *dan1-xin1* (carry-heart) 'be concerned' and observed that many of them exhibit both lexical as well as phrasal characteristics in different syntactic environments, as the examples in 1 and 2 seem to indicate respectively.

1. Ni3 dan1xin1 ta1 de   bing4.
   you worry   he POSS illness
   You worry about his illness.

2. Ni3 dan1 she2me xin1 ne?
   you carry what   heart PTCL
   What are you concerned about?

However, there is little agreement as to whether a certain [verb + object] structure should be considered morphological within a word or syntactic in a phrase. On the other hand, there has not been any attempt to account for the occurrence of this variation. Logically, there could exist three types of VO sequences that merit to be specified in the lexicon: 1) those that behave only as words, 2) those that behave only as idiom phrases, and 3) those that behave as words and phrases depending on the environments. Clearly, in terms of phrases, in the lexicon we are only concerned with idiom phrases whose meaning is not predictable from the compositional meaning of [verb + object] and hence has to be lexically encoded (Sciullo and Williams 1987). Therefore, as shown in Table 1, there is a fourth type: the regular [verb-object] syntactic phrases that have no place in the lexicon and are completely governed by syntactic rules. The typology of VO sequences can be shown as follows:

Table 1. Typology of VO Sequences

Word	Idiom Phrase	Type
+	-	1) word
-	+	2) idiom phrase
+	+	3) dual status
-	-	4) regular phrase

In determining the lexical and phrasal status of a VO sequence, we will assume the modularity of syntax and lexicon embodied in the 'lexical integrity hypothesis' (LIH), stated in Huang (1984:60):

The Lexical Integrity Hypothesis
No phrase-level rule may affect a proper subpart of a word.

This modularity hypothesis rectifies the lack of theoretical constraints in the traditional treatments of VO compounds; a VO compound can now be explicitly defined as a lexical unit whose inner structure, though historically traceable to be [V+O], is inaccessible to synchronic phrase-level rules (Her 1994).

1.1 VO Sequences as Words Only

We indeed observe certain VO sequences whose historically traceable [VO] structure is consistently concealed to all syntactic rules, in that no linguistic elements may have access to the composing elements and thus affect their lexical integrity. As shown in Her (1991a, 1994), genuine VO compounds can still be further classified into three subtypes in terms of their transitivity: 1) intransitive, 2) transitive, and 3) semi-transitive[1]. In Table 2 below are some examples of VO compounds that function only as words.

Table 2. VO Compounds that Function Only as Words

1) Intransitive:

de2yi4	(gain sentiment)	be proud
chuan2shen2	(convey spirit)	be animated
wang4wo3	(forget me)	be totally absorbed

2) Transitive:

guan1xin1	(shut heart)	be concerned about
cong2shi4	(follow matter)	be engaged in
liu2yi4	(keep mind)	pay attention to

3) Semi-transitive:

zai4hang2	(at profession)	be good at
na2shou3	(take hand)	be good at
wen4jin1	(ask ferry)	show interest in

Aside from the fact that here the V and O cannot be separated, several other pieces of more specific syntactic evidence are available to dismiss their phrasal status. First, if verb-copying is possible (cf., Chang 1991), the second occurrence of the verb has to be the entire VO verb, never just the V part. Similarly, the answer to a yes-no question and the V-not-VO or VO-not-VO question, if allowed, cannot be simply the V and must be the entire VO word, as in 3-5, whereas in a phrasal construction, such as 6, V alone is sufficient as the answer.

3.q: Ta1 de   mioa3shu4 chuan2- bu4-chuan2shen2?
    he POSS description CHUAN2 not animated
    Is his description animated?
  a: (Bu4) chuan2*(shen2).

4.q: Ta1 guan1xin1 ni3 ma1?
    he concerned you PTCL
    Is he concerned about you?
  a: (Bu4) guan1*(xin1).

5.q: Ying1wen2, ta1 zai4-bu4-zai4hang2?
    English   he ZAI not good-at
    Is he good at English?
  a: (Bu4) zai4*(hang2).

6.q: ta1 jiao1-bu4-jiao1 ying1wen2?
    he teach not teach English
    Does he teach English?
  a: (Bu4) jiao1 (ying1wen2).

Furthermore, a non-echo wh-question cannot be formed with *she2me* 'what' in the place of the O in VO compound verbs, again unlike phrasal VO sequences. Compare the VO compound verbs in 7-9 with the VO phrase in 10 below.

7. *Ta1 de   hua4   chuan2-shen2me?
    he POSS painting convey what

8. *Ta1 guan1-she2me ni3?
    he shut   what you

9. *Ying1wen2, ta1 zai4-she2me?
    English   he at   what

10. Ta1 jiao1 she2me?
    he teach what
    What does he teach?

Thus, what we consider Type 1 VO compounds include, but are not limited to, what Chao (1968:426) calls 'solid VO compounds' and what Huang (1984:71) considers the first type, both of which are unnecessarily over-restricted, when Huang's LIH is taken seriously. What Chao calls 'solid VO compounds' allow only the VO-not-VO question form, and thus omits genuine VO compound verbs that allow the V-not-VO form. We nonetheless contend that the V-not-VO form, an instance of the more general A-not-AB form of question, is by no means a syntactic process, whether we assume the solution of phonological reduplication in Huang (1984:75, 1988) or the morphological analysis of Dai's (1990, 1991), since both accounts preserve the lexical integrity of Type 1 VO verbs in the V-not-VO construction. Even in the syntactic solution in Categorial Grammar proposed in Sheu (1991), albeit lexical integrity is violated (James Huang p.c.), true VO compounds still enter the syntactic component of the grammar as words but never as phrases. In other words, in all these previous accounts of the A-not-AB question form, genuine VO verbs, i.e., VO sequences of our Type 1, are words only, not phrases, in the lexicon.

Huang (1984:71), on the other hand, seems to take both inseparability and transitivity as necessary conditions for a VO sequence to have the status of a word, thus our Type 1 here. Furthermore, due to his Phrase Structure Constraint (PSC) that a Chinese verb may not be followed by more than one constituent (Huang 1982:41), transitivity alone is a sufficient condition; hence the implication that the intransitive VO verbs we have listed in Type 1, e.g., *de2yi4* 'be proud' and *chuan2shen2* 'be animated', should still be considered phrases. This implication is counter-productive. First of all, it misses the lexical characteristics of these intransitive verbs, and secondly, treating them as words does not in any way violate PSC. Take *chuan2shen2* 'be animated' in 3 above as an example: the syntactic test indicates clearly that, unlike a V-O phrase (idiomatic or not), the answer to a V-not-VO question here cannot be V only. Likewise, *de2* cannot be the answer to *de2-hu4-de2yi4* 'proud or not'. Since there is never more than one constituent allowed following these verbs, PSC is never violated. Lexical integrity of these lexical items is also preserved, since no syntactic rules may affect the internal structure either.

1.2 VO Sequences as (Idiom) Phrases Only

The second type of VO sequences always function as phrases, never as words. Again, the only VO phrases that need to be specified in the lexicon are idiom phrases. Unlike Type 1 VO sequences whose [VO] structure is word-

internal and entirely inaccessible in syntax. the structure [V-O] of Type 2 idiom phrases is in itself assigned through, and thus accessible to, syntactic rules[2]. Consequently, according to the LIH, they cannot be words. A host of VO sequences in Mandarin fit this description; examples are shown in Table 3 below[3].

Table 3. VO Sequences that Function Only as Phrases

chi1..dou4fu3	(eat..tofu)	tease (flirtatiously)
chi1..ruan3 fan4	(eat..soft rice)	(man) live off a woman
chi1..cu4	(eat..vinegar)	be jealous
sheng1..qi4	(generate..air)	be angry
qiao4..bian4zi	(stick-up..pigtail)	die
kai1..dao1	(open..knife)	operate (surgically)
kai1..wan2xiao4	(open..joke)	joke
tai2..gang4	(carry..lever)	argue

Obviously. if the [V-O] structure is syntactically transparent, additional phrasal elements. such as aspect markers. possessive NPs. and various adjunctive modifiers. can intervene between the V and O. as shown in 11-14.

11. Ta1 xi3huan1 chi1 nen4   do4fu3.
    he like   eat tender tofu
    He likes to tease the young ones.

12. Ta1 hai2zai4 sheng1 zhe   qi4.
    he still   generate PROG air
    He is still being angry.

13. Ta1 dei3 kai1 ji3   ci4 dao1?
    he must open how-many time knife
    How many times must he operate?

14. Ta1 kai1 ni3 de   wan2xiao4.
    he open you POSS joke
    He is joking with you.

In addition, verb-copying, yes-no question, and V(O)-not-VO question again serve as tests. When a Type 2 VO sequence appears in the verb-copying construction, the second occurrence of the verb has to be the single V, never the entire VO. The answer to a yes-no question or and a V(O)-not-VO question may simply be the V by itself, or the entire VO phrase. Furthermore, due to their idiomatic nature, most of the Type 2 VO sequences, e.g., 11, may be ambiguous in that they have both a predictable literal compositional reading not specified in the lexicon as well as the conventionalized idiomatic reading. Again, only the idiomatic meaning together with the particular syntactic environments where such meaning is possible need to be specified in the lexicon. This is precisely the reason why when a non-echo wh-question is formed with she2me replacing the O, the idiomatic reading disappears. Lastly, precisely as noted in Huang (1984:73), in many previous discussions on 'VO compound' verbs, e.g., Chao (1968) and Li and Thompson (1981), (Type 2) VO idiom phrases are confused with (Type 1) VO compounds (i.e., words).

1.3 VO Sequences of Dual Status

Since Type 2 VO sequences do not exhibit any lexical characteristic, except that their meaning has to be lexically encoded, there is no justification whatsoever to consider them also as words. We do find, however, certain VO sequences that are of dual status and function both as words and idiom phrases. Instances of Type 3 VO sequences are relatively few, especially in comparison to Type 2: Table 4 gives some examples.
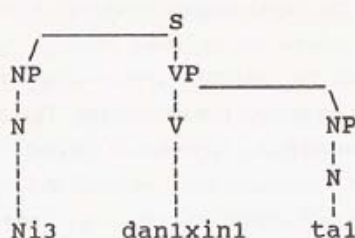
Table 4. VO Sequences of Dual Status

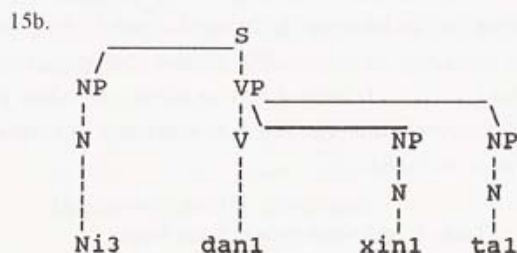| fang1-xin1 | (put down heart) | rest assured |
dan1-xin1	(carry heart)	be concerned about
fu4-ze2	(bear duty)	be responsible
bang1-mang2	(help business)	help
you1-mo4	(humor)	joke

A word of strong caution first, by 'dual status' we do not mean that a VO sequence could be both lexical and phrasal simultaneously in a given context. Rather, a Type 3 VO sequence may act exactly like a word in a certain environment, and yet behave like a phrase elsewhere. To illustrate, when a VO sequence of Type 3 is followed by another NP it functions as a single transitive

verb whose internal [VO] structure is irrelevant to the structure of the sentence, as shown in the following tree.

15a. Ni3 dan1xin1   ta1.
     you concerned-about he
     You are concerned about him.

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                        S
              /                 ┊
         NP                     VP
         ┊                      ┊ _____
         N                      V           NP
         ┊                      ┊           ┊
         ┊                      ┊           N
         ┊                      ┊           ┊
        Ni3                  dan1xin1      ta1
```

The only alternative is to argue that *dan1* and *xin1* are two separate categories, each accessible to syntactic rules, and therefore 15 would have the following constituent structure.

15b.

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                        S
              /                 ┊
         NP                     VP
         ┊                      ┊ \ _____
         N                      V      NP       NP
         ┊                      ┊      ┊        ┊
         ┊                      ┊      N        N
         ┊                      ┊      ┊        ┊
        Ni3                   dan1    xin1     ta1
```

Huang (1984) rejects this analysis, according to his Phrase Structure Constraint (PSC) that in Chinese a verb may not be followed by more than one constituent. However, other evidence is also available. This constituent structure of 15b has to suggest that *dan1* is ditransitive, similar to other ditransitive verbs such as *gei3* 'give' and *qiang3* 'rob', with two subcategorized NPs, i.e., direct object and indirect object. Nevertheless, the fact that *dan1* and *xin1* can not be separated in this particular usage rules out this possibility.

16. *Ni3 dan1 le   xin1 ta1.
    you carry PERF heart he
    You have been concerned about him.

17. Ni3 gei3 le   ta1 qian2.
    you give PERF he money
    You gave him money.

18. Ni3 qiang3 le   ta1 qian2.
    you rob   LE he money
    You robbed him of his money.

Other syntactic tests, e.g., the V-not-VO question form (19) and yes-no question form (20), among others such as verb-copying, also show that transitive *dan1xin1* behaves as a word whose internal [VO] structure is invisible in syntax.

19.q: Ni3 dan1-bu4-dan1xin1   ta1?
      you DAN not concerned-about he
      Are you concerned about him?
   a: (Bu4) dan1*(xin1).

20.q: Ni3 dan1xin1 ta1 ma1?
      you concerned he PTCL
      Are you concerned about him?
   a: (Bu4) dan1*(xin1).

Having established that *dan1xin1* as a transitive and inseparable [VO]ᵥ sequence is a genuine compound, thus a word, we also observe that elsewhere *dan1..xin1* behaves like an idiom phrase, for the two parts may easily be separated, as shown in 21-24, and thus are subject to various syntactic operations.

21. Ta1 dan1 le   ban4tian1 xin1.
    he carry PERF half-day   heart
    He was concerned for quite a while.

22. Ni3 she2me xin1 ye3 bie2 dan1.
    you what   heart also don't carry
    You don't have to be concerned at all.

23. Zhei4 zhong3 xin1 ni3 bie2 dan1.
    this kind   heart you don't carry
    Don't you be concerned about such a thing.

24. Ta1 dan1 shei2 de   xin1?
    he carry who POSS heart
    Who is he concerned about?

To summarize, while Type 3 VO sequences are of dual status in that they function as words when followed by another NP and as phrases elsewhere, Type 1 sequences are always words and Type 2 sequences function only as idiom phrases.

2. INTERACTION BETWEEN STRUCTURE AND LEXICON

In this section we will examine the indispensable role of lexicalization in the rise of VO compounds and the secondary, nonetheless indispensable, role of ionization in the emergence of VO idiom phrases.   Within the view that lexicalization and ionization are competing forces of the two respective distinct modules of lexicon and syntax, we find an interpretation for the variations of VO sequences within the thesis of interaction.

2.1 Lexicalization and Ionization

Chinese linguists have long recognized various types of existing compounds in Chinese as the results of the lexicalization of earlier phrases, in part due to the disyllabification tendency and the increase of polysyllabic words in the language (e.g., Li and Thompson 1981:68). In fact, as Huang (1984:71) aptly points out, the emergence of new lexical items through the process of lexicalization is common in all languages. The Chinese VO compounds are so called precisely because their internal [VO] structure, though inaccessible to synchronic syntactic rules, was an external structure of [verb-object]$_{vp}$ transparent in syntax historically.

Therefore, as mentioned earlier, the idiomatic expressions whose [verb-object]$_{vp}$ structure is externally assigned in syntax, i.e., Type 2 VO sequences, should not be taken as compounds. More specifically, syntactically idiom phrases have not completed the process of lexicalization, although their semantic structure has been lexicalized and thus merits lexical encoding.   Given this understanding, the number of VO compounds should be far smaller than previously conceived. Often, the original [V-O] phrase, after lexicalization, loses its phrasal status, the result of which is a Type 1 compound.   However, it is entirely conceivable that, while lexicalization produces a new VO compound, the original [V-O]$_{vp}$ phrase retains its phrasal status in the language, as evidenced by the Type 3 VO sequences like *dan1-xin1*, which functions both as a word and an

idiom phrase. Figure 1 below depicts, rather simplistically no doubt, the two stages of this historical process.

Stage	Idiom Phrase	Process	Verb	Type
1	$[de2]_v..[yi4]_n$	LXL -->	$[de2yi4]_v$	
	$[chi1]_v..[cu4]_n$		$\varnothing$	
	$[dan1]_v..[xin1]_n$	LXL -->	$[dan1xin1]_v$	
2	$\varnothing$		$[de2yi4]_v$	1
	$[chi1]_v..[cu4]_n$		$\varnothing$	2
	$[dan1]_v..[xin1]_n$		$[dan1xin1]_v$	3

Fig. 1. Historical process of lexicalization

However, lexicalization cannot account for the current state of what we will call 'pseudo-VO compounds', e.g., *you1mo4* 'tease', and 'pseudo-VO idioms', e.g., *xiao3..bian4* 'pee' and *you1..yi1 mo4* 'tease..a bit'. Historically, a pseudo-VO compound is not a lexicalized V-O phrase, and yet synchronically it must have a corresponding pseudo-VO idiom phrase. A pseudo-VO idiom phrase, unlike genuine V-O phrases, attains its V-O structure only in the strict syntactic context where the idiomatic meaning is possible; in other words, its composing verb and noun may not function as such elsewhere. Although these are relatively rare, their sheer existence has interesting implications.

You1mo4 was originally a loan word in Chinese from English *humor*. Although originally a noun, it now also functions as a verb, intransitively (25) and transitively (26)[4], and in a strictly constrained syntactic environment *you1* and *mo4* appear to function as a [V-O] idiom phrase (27).

        25.q: Ta1 you1-bu4-you1mo4?
            he YOU not humorous
            Is he humorous?
        a: (Bu4) you1*(mo4).

        25. Ta1 chang2 you1mo4 ni3.
            he often tease you
            He teases you often.

27. Wo3 you1 le   ta1 yi1 mo4.
    I   YOU PERF he one MO
    I teased him a bit.

The fact that *you1* does not function as a verb nor *mo4* a noun individually positively identifies the verb *you1mo4* (most likely in its transitive reading) as the source of the by-now VO phrase *you1 someone yi1 mo4*. We will refer to this historical process as 'ionization', a term first used in Chao (1968) in referring to the phenomenon or process where the composing elements of a lexical item, e.g., the two syllables in a VO compound, become separate independent constituents and thus accessible by syntactic rules (cf. Huang 1984:76, Jin 1991). Notice that, like lexicalization, ionization does not necessarily prevent the input base form from retaining its original lexical status; thus, *you1mo4* still functions as a single word. In this sense, its (mis-)perceived VO internal structure is in actuality due to back-formation.

Instances are also found of verbs losing their word status while gaining their VO phrasal status via ionization, for example, *xiao3..bian4* 'pee' and *ju2..gong1* 'bow'. In the following sentences, 28-29 indicate the phrasal status of the V-O sequences by separability, while 30-31 by the possible answers to the V-not-VO question form.

28. Ni3 xiao3 le   san1 ci4 bian4.
    you pee PERF three time body-waste
    You peed three times.

29. Ni3 ju2 le   san1 ge gong1.
    you bow PERF three CLS bow
    You made three bows.

30.q: Ni3 xiao3-bu4-xiao3 bian4?
      you XIAO not pee body-waste
      Do you pee?
    a: (Bu4) xiao3 (bian4).

31.q: Ni3 ju2-bu4-ju2 gong1?
      you JU not bow bow
      Do you bow?
    a: (Bu4) ju2 (gong1).

However, unlike loan words, the (now defunct) compound verbs *xiao3bian4* and *ju2gong1*, from which ionized phrases came, were themselves words which came from lexicalization. Figure 2 sketches the three stages of the evolution of some of the ionized words in the language.

Stage	Phrase	Process	Verb	Type
	$[de2]_a..[yi4]_n$	LXL -->	$[de2yi4]_v$	
1	$[xiao3]_a..[bian4]_n$	LXL -->	$[xiao3bian4]_v$	
	∅		$[you1mo4]_v$	
	∅		$[de2yi4]_v$	
2	$[xiao3]_v..[bian4]_n$	<-- INZ	$[xiao3bian4]_v$	
	$[you1]_v..[mo4]_n$	<-- INZ	$[you1mo4]_v$	
	∅		$[de2yi4]_v$	1
3	$[xiao3]_v..[bian4]_n$		∅	2
	$[you1]_v..[mo4]_n$		$[you1mo4]_v$	3

Fig. 2. Historical process of ionization

2.2 An Interactionist Interpretation

An essential notion of the lexical diffusion hypothesis is that a sound change affects the applicable lexical items in the lexicon one at a time; in other words, it diffuses through the lexicon in a gradual manner (Wang 1969, Chen and Wang 1975). This notion of diffusion may be extended to grammatical changes (e.g., Her 1990b, 1994) as well as dialectal deviations (Hsieh 1992a, Shen 1990). At any given point in time, among the V-O phrases which are candidates for lexicalization, only a portion of them have become words, since the lexicalization process affects them only one at a time. Likewise, same kind of effect is observed with ionization: only a few of the applicable words have been ionized into phrases. Furthermore, the lexical diffusion hypothesis also recognizes the possibility for competing changes and thus the possibility that a change does not run its entire course.

Hsieh (1989, 1992a, 1992b), extending Wang's (1969) notions of lexical diffusion and competing changes, puts forth a general scheme of grammatical interaction to account for synchronic variations as well as diachronic

irregularities. He suggests that, assuming a grammar consists of various distinct parallel planes or modules, these modules are constantly interacting with one another, and thus at any point in time given any grammatical pattern, grammatical rules or processes, which may be of the same or different linguistic modules, applicable to this particular pattern are engaged in interaction such as competition or complementation. Variation or irregularity is the consequence of such interaction.   Within the study of Chinese linguistics, there has been a number of papers supporting this thesis of interaction, an extended version of the lexical diffusion hypothesis; refer to Her (1993) for an overview and a summary of such works.

Given the modularity hypothesis embodied in Huang's (1984) LIH, syntax and lexicon, being two separate modules in grammar, each has its inherent force to claim its integrity. Ionization thus can be viewed as a force of syntax, which preserves accessible phrasal categories and also disintegrates lexical items into syntactically transparent phrases. Lexicalization, on the other hand, enhances the lexicon by maintaining the integrity of existing words as well as by integrating phrases into syntactically opaque compounds. Within this broader interpretation of ionization and lexicalization where they not only represent the process but also the state, ionization and lexicalization are two opposing counteractive forces. Four consequences may obtain due to the competition between these two forces, as shown in Table 5 below.

Table 5. Interaction of Lexicalization and Ionization

Ionization	Lexicalization	Consequence
-	+	Type 1. Word only
+	-	Type 2. Phrase only
+	+	Type 3. Dual status
-	-	Type 4. Obsolete expressions

A linguistic expression, whether a phrase or a word, that is by now obsolete in the current language is thus taken to be one that serves neither as a phrase nor a word. Words are those whose internal structure, if any, remains inaccessible to syntax and thus unaffected by ionization; they may originate in the lexicon, e.g., loan words like *luo2ji2* 'logic', or they may be lexicalized compounds such as Type 1 VO compounds. In contrast, those whose structure is

assigned through syntax and thus unaffected by lexicalization are phrases, regular or idiomatic, including Type 2 V-O idiom phrases. And again, either they originate in syntax, e.g., *mai3 shu1* 'buy books' and *chi1 cu4* 'be jealous', or they are ionized words such as *xiao3..bian4* 'pee'. Finally, those affected by both lexicalization and ionization are of dual status. They can still have emerged through two entirely different paths: 1) a phrase which retains its phrasal status after lexicalization, e.g., *dan1-xin1* 'be concerned', or 2) a word which retains its word status after ionization, e.g., *you1-mo4* 'tease'[5].

The interaction thesis thus provides an interpretation of the variations of VO sequences: words, phrases, and dual status, as the consequence of the interaction between lexicalization, a force of lexicon, and ionization, a force of syntax. However, as we have observed, a great deal more phrases are lexicalized into words compared to words ionized into syntactically transparent phrases; undoubtedly then, lexicalization is a much stronger force than ionization. A plausible interpretation for this is given in Huang (1984:71):

> Ionization involves the increasing of the complexity of a structure, or increasing the depth of embedding in a tree. Lexicalization, on the other hand, has the effect of regularizing a more complex structure into a simpler one: making a simple word out of a phrase.

3. CONCLUSION

We have first distinguished a typology of four explicit types of VO sequences, assuming the modularity of syntax and lexicon, and of them there are three types that need to be specified in the lexicon. While they are many VO sequences that function either as words only (Type 1) or phrases only (Type 2), a relatively few are found to be of dual status (Type 3). Historically, most VO compounds in modern Chinese are indeed originally VO phrases and have undergone lexicalization, but there are also a rare few so-called 'pseudo-VO idioms' recognized as ionized words. We interpret the idiosyncrasies of VO idioms and compounds as consequences of lexical diffusion, and the variation of VO sequences as the consequence of the interaction between ionization and lexicalization, two competing forces of structure and lexicon. In cases where lexicalization, the force of lexicon, prevails over the force of syntax, ionization, compounds, or words in more general terms, obtain; where ionization prevails, phrasal status obtains. Lexical status and phrasal status coexist when the competition between lexicalization and ionization is unresolved or still on-going.

This constant, dynamic counteraction and balancing between these two forces thus not only accounts for the variation of VO construction in modern Chinese, but also provides a theoretical foundation for Langacker's (1977) claim that the constant changing in language does not appear to decrease nor increase in overall complexity in the long run. The interaction thesis thus predicts that the grammar is naturally in a state of dynamic equilibrium of state (Hsieh 1989, Her 1990b, 1994).

NOTES

* Earlier versions of this paper were presented at the First International Conference of Chinese Linguistics in Singapore, June 24-6, 1992 (Her 1992), and also at the Linguistic Workshop at National Chengchi University on October 28, 1992, and at the Graduate Institute of Linguistics, National Tsinghua University on December 21, 1992. I would like to thank the several professors for their insightful discussions and suggestions; they are Hsin-I Hsieh, Claire Chang, Chin-Fa Lien, and Feng-Fu Taso. However, I alone shall be responsible for any remaining errors or inadequacies.

1. See Her (1991a, 1994) for a comprehensive description of their different behaviors, an LFG account for such behaviors, and also an interactionist account of the occurrence of this variation in transitivity among VO compounds, where the variation is attributed to the conflicting forces of transitivity and intransitivity along two autonomous dimensions within syntax: the c-(onstituent) structure and the f-(unctional) structure.

2. Huang (1987, 1990), in an LFG account, does not assign the object function, O, to the NP in Type 2 VO sequences. Such a position is problematic; we maintain that, in agreement with the position held by Bresnan (1982:46), Her (1990a, 1991b), and Her et al (1994), syntactically, in terms of both c- and f-structures that is, Type 2 idiom phrases are identical with regular [V-O] phrases and that the difference between them is in semantics, not in f-structure (Her in preparation). Such a position is also implicit in the work on idioms by Wasow et al (1983).

3. In this paper, a VO sequence analyzed only as a word is transcribed continuously, such as *guan1xin1* 'to be concerned'; a sequence analyzed only as a VO phrase is written as V..O, e.g., *kai1..dao1* 'to operate (surgically)'; and a sequence of the dual status has a dash between V and O, e.g., *dan1-xin1* 'to be worried', an abbreviation of [*dan1xin1* plus *dan1..xin1*].

4. It is of course via lexicalization that the intransitive state verb *you1mo4*, meaning 'humorous', and the transitive verb, meaning 'to tease', have come about.

5. Both paths are also followed in English; here we list some examples.

> 1) kick someone's ass -> kick-ass (adj)
>
> cut someone's throat -> cut-throat (adj)
>
> stick to it -> stick-to-itiveness (n)
>
> who've done it -> whodunit (n)
>
> others such as wannabes, has-beens, might-have-beens
>
> 2) smoking or non-smoking -> smoking or non
>
> pro-capital punishment or anti-capital punishment
>
> -> pro or anti-capital punishment
>
> skin diving or scuba diving
>
> -> "skin or scuba diving is prohibited" (Santa Cruz
> Fishermen's Wharf)

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互動與解釋: 論漢語動實結構的變化

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＊　本文整合了三個概念: 王士元（Wang 1969 ）的 變化 競 爭（competing changes）,黃正德(Huang 1984)的模 塊(modularity), 及謝信一(Hsieh 1992a) 的語法互動（ grammatical interaction ） , 并以此對漢語中動實結構的 變化 （ variation ）做出分析和解釋。我們首先建立并驗證 漢語中動實結構的幾種 可能的形態: 一。（復合）詞，二 成語詞組，三。 雙重語位: 單詞及詞組， 四。一般詞組； 接著進一步地將這數種形態變化的發生歸因于詞?（lexicon） 與句（syntax）這兩個不同模塊之間的競爭，而詞彙 勢力的具體表現就是詞彙 化（lexicalization）的過程，句法勢力的擴張則是經由離子化（ionization）的 過程。漢語中動實結構結構的變化在這種解釋下再次說明了語法 結構的變化 是各種不同的競爭的或互動的勢力之間的互動 關係所造成的結果（ Her 1994)。