

Variation of the VO construction in Chinese: a synchronic account*

ONE-SOON HER

Abstract

Based on three explicitly defined types of VO sequences in Chinese: (1) words, (2) idiom phrases, and (3) dual status — words and phrases (Huang 1984; Her 1992, 1993), this paper argues for a lexicalist synchronic account of this variation. Diachronically this variation is the consequence of two competing processes, lexicalization and ionization (Her 1993); synchronically, however, the two process-oriented solutions, lexicalization and ionization, both defy generalization and complicate the grammar, leaving lexical listing a better alternative.

1. Background

VO sequences that have been loosely identified as “VO compounds” in the literature of Chinese linguistics can be explicitly classified into three types in terms of their linguistic form and associated functions: (1) those used only as words, (2) those used only as phrases, and (3) those of dual status: lexical and phrasal (Huang 1984; Her 1992). From a diachronic perspective, it has been established within the thesis of grammatical interaction (e.g. Hsieh 1989, 1992a, 1992b; Du Bois 1985; Sadock 1991; Newmeyer 1991a, 1991b) that this variation is a natural result of the constant competition between lexicalization, a process that turns VO phrases into VO compounds, and ionization, the syntactic strategy that reverses a word into a VO phrase (Her 1992, 1993).

In light of the three different types and the historical account of this variation of VO sequences, this paper examines the previous accounts in Chao (1968), Jin (1991), and Huang (1984) and supports a lexicalist synchronic solution of this variation.¹ This paper is organized as follows: section 2 identifies the three types of VO sequences; section 3 then lists the three possible solutions for this variation and presents an in-depth

discussion on the problematic ionization solution. The lexicalization account is deliberated in section 4, and the dual-listing solution is supported in section 5. Concluding remarks are given in section 6.

2. Three types of VO sequences

In order to carry on a meaningful discussion on “VO compounds,” one must first explicitly define what a VO compound is. The term “compound” is unfortunately often used incorrectly. Li and Thompson (1981), for example, include many VO sequences that are obviously VO phrases, such as *shoul huang3* ‘tell lies’, in their discussion of so-called “VO compounds.” Compounding, in the standard sense as a word-formation process, involves the creation of a word out of two or more words (e.g. Starosta 1988: 251) or roots (e.g. Kaplan 1995: 85). A VO compound is thus a lexical unit (of an X-zero category in X-bar terms) whose inner structure is of a [V + O] origin (Her 1991, 1994). An important feature that distinguishes lexical units from phrasal units is of course lexical integrity. A version of the lexical integrity principle is stated in Huang (1984: 60) as the lexical integrity hypothesis (LIH):

The lexical integrity hypothesis:

No phrase-level rule may affect a proper subpart of a word.

A sensible way to identify a VO sequence as a compound is therefore to demonstrate that no phrase-level rule may affect the two subparts, V and O. Lexical integrity thus also entails that a VO sequence whose VO structure is affected by any syntactic rule must be recognized as a phrase. Huang’s version of lexical integrity is stated in the strongest possible terms in suggesting that the internal structure of words is not accessible to any phrase-level rule and thus entails strict modularity of syntax and lexicon. Some researchers have argued, however, that lexical structures may in certain cases be accessible to syntactic processes (e.g. Cho and Sells 1995; Mohanan 1995; Bresnan and Mchombo 1995). In adopting Huang’s version, I am not claiming that strict lexical integrity can be maintained universally; however, it should be the starting working hypothesis and relaxed only as a necessary compromise. According to the lexical integrity hypothesis, then, there could logically exist three types of VO sequences: (1) those that behave only as words, (2) those that behave only as phrases, and (3) those that behave as words and phrases in different environments.

2.1. VO sequences as words only

Genuine VO compounds are found in all major lexical categories, such as adverb, for example *zhuan3yan3* (turn eye) 'instantly', *zhao4chang2* (follow normality) 'as usual', and *dao4di3* (reach bottom) 'after all'; noun, for example *bang3tui3* (tie leg) 'gaiter', *zhen3tou2* (rest head) 'pillow', and *ling3shi4* (lead affair) '(diplomatic) consul'; and most importantly, verb. Verbs form by far the majority of VO compounds and will be the focus of our discussion. VO verbs can be further classified into three subtypes in terms of transitivity: (1) intransitive, (2) transitive, and (3) semitransitive (Her 1991, 1994);² Table 1 offers some examples.

As stated earlier, in order to establish the status of a genuine VO compound, one should demonstrate that no phrase-level rule may affect the two subparts, V and O. Although it is not practical to enumerate and test each and every syntactic process, several facts do indicate that no phrase-level rules may affect the inner VO structure of these compounds. First of all, no grammatical elements, including aspect markers, can come in between V and O, as in (1). (The only possible exception to this is the A-not-AB construction, which I will discuss momentarily.) In cases where verb copying is possible (cf. Chang 1991), the second occurrence of the verb has to be the entire VO, never just V by itself, as in (2); whereas in a phrasal [verb + object] construction, the "copied" form can only be the verb, as in (5). Furthermore, the answer to a yes-no question, V-not-VO question, or VO-not-VO question cannot be the V

Table 1. VO compounds that function only as words³

1. Intransitive:		
<i>shilwang4</i>	(lose hope)	'be disappointed'
<i>de2yi4</i>	(gain will)	'be proud'
<i>chuan2shen2</i>	(convey spirit)	'be animated'
<i>wang4wo3</i>	(forget I)	'be absorbed'
2. Transitive:		
<i>liu2yi4</i>	(keep intent)	'observe'
<i>guan1xin1</i>	(shut heart)	'be concerned about'
<i>chu1ban3</i>	(produce plate)	'publish'
<i>tiao2ji4</i>	(mix dose)	'adjust'
3. Semitransitive:		
<i>zai4hang2</i>	(at profession)	'be good at'
<i>na3shou3</i>	(take hand)	'be good at'
<i>guo4mu4</i>	(pass eye)	'skim through'
<i>wen4jin1</i>	(ask ferry)	'show interest in'

subpart alone. It must be the entire VO verb, as in (3) and (4); whereas in a phrasal [verb + object] construction like (6), no such restrictions apply. Finally, a nonecho wh-question cannot be formed with *she2me* 'what' in the place of the O in VO compound verbs, as in (7),⁴ again unlike a syntactic object, as in (8)

- (1) **Ta1 shi1-le-wang4*.
 he was disappointed
 'He was concerned about me.'
- (2) *Wo3 liu2yi4 ta1 liu2*(yi4) le hen3 jiu3⁵*.
 I observe he observe PERF⁶ very long
 'I have watched him for a long time.'
- (3) q: *Ta1 guan1xin1 ni3 ma1?*
 he concerned you PTCL
 'Is he concerned about you?'
 a: (Bu4) *guan1*(xin1)*.
- (4) q: *Ying1wen2, ta1 zai4 (hang2) -bu4-zai4hang2?*
 English he ZAI HANG not good at
 'Is he good at English?'
 a: (Bu4) *zai4*(hang2)*.
- (5) *Wo3 xi3 che1 xi3 (*che1) le hen3 jiu3*.
 I wash car wash car PERF very long
 'I have been washing the car for a long time.'
- (6) q: *ta1 jiao1-bu4-jiao1 ying1wen2?*
 he teach not teach English
 'Does he teach English?'
 a: (Bu4) *jiao1 (ying1wen2)*.
- (7) **Ta1 shi1she2me?*
 he disappointed
- (8) *Ta1 mai3 she2me?*
 he buy what
 'What does he buy?'

One might suspect that in a V-not-VO question form of a VO compound, lexical integrity is violated, as *zai4 bu2 zai4hang2* in sentence (4). However, the general A-not-AB construction, of which V-not-VO is one instance, is not a syntactic process, a position upheld in both Huang (1984: 75; 1988), where the reduplication of A is postsyntactic and phonological, and Dai (1990, 1991), where the reduplication is morphological. The two competing accounts thus both preserve lexical integrity.⁷

2.2. VO sequences as (idiom) phrases only

Aside from the straightforward regular [verb + object] phrases, there are also VO idioms, with nonliteral meaning available within certain structural constraints. It is commonly assumed that such idiom phrases are lexically encoded. It is the idiom phrases that are of particular concern to us here, for they have often been misidentified as VO compounds. As Huang (1984: 73) has pointed out, the majority of the so-called "VO compound" verbs in previous discussions, such as Chao (1968), Lu (1982), and Li and Thompson (1981), are in fact idiom phrases under a more explicit definition.

Unlike type 1 VO compounds, the [verb + object] structure of type 2 idiom phrases is assigned through, and thus accessible to, syntactic rules. Therefore, in accordance with the lexical integrity hypothesis, they must be phrases. Examples are shown in Table 2.

Since the [VO] structure here is syntactically transparent, additional phrasal elements, such as aspect markers as in (9), possessive NPs as in (10), and various adjunctive modifiers as in (11)–(12), can appear between V and O.⁸

- (9) Ta1 hai2zai4 sheng1 zhe qi4.
he still generate PROG air
'He is still being angry.'
- (10) Ta1 kai1 ni3 de wan2xiao4.
he open you POSS joke
'He is joking with you.'
- (11) Ta1 xi3huan1 chi1 nen4 do4fu3.
he like eat tender tofu
'He likes to eat tender tofu.' OR
'He likes to flirt with the young ones.'
- (12) Ta1 dei3 kai1 ji3 ci4 dao1?
he must open how-many time knife
'How many times must he operate?'

Table 2. VO sequences that function only as phrases

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

Due to their idiomatic nature, some of the type 2 VO sequences, such as (11), may be ambiguous with a predictable compositional reading and a conventionalized idiomatic reading. Also, each VO idiom may have its (largely unpredictable) restrictions in terms of syntactic processes, such as internal modification, quantification, specification, topicalization, *ba* construction, *bei* construction, deletion, anaphora, etc. It is the idiom's noncompositional or nonliteral meaning together with the particular syntactic environments where such reading is available that need to be specified in the lexicon.

Finally, one might question the strict lexical integrity again regarding idioms whose idiomatic reading is available only in a highly constrained syntactic context. In the case of *qiao4..bian4zi* 'kick the bucket', for example, the only element that is allowed between V, *qiao4*, and O, *bian4zi*, is the aspect marker *le*. One might thus suggest that it can be treated as a compound rather than an idiom phrase, if lexical integrity may be relaxed a bit to allow *le* insertion. Such an account, however, would have difficulty explaining why such compounds, unlike the majority of compounds, need to be marked for this *le* insertion and why, among the three aspect markers, *zhe*, *guo*, and *le*, only *le* violates lexical integrity. The idiom solution, however, maintains two generalizations: idiosyncratic constraints on idioms are lexically specified, and no phrase-level rule may violate lexical integrity.

2.3. VO sequences of dual status

There are certain VO sequences that are of dual status in that they function both as words and as idiom phrases in different environments. Unlike type 1 VO compounds and type 2 VO idioms, instances of type 3 are scarce, but their sheer existence calls for careful examination and an explanatory account. Table 3 lists the ones that I have identified so far.

Note that "dual status" does not mean that a VO sequence is both lexical and phrasal in a given context. Rather, a type 3 VO sequence may behave exactly like a word in one environment and yet behave like a

Table 3. VO sequences of dual status

dan1-xin1	(carry-heart)	'worry'
fang1-xin1	(release-heart)	'not worried'
fu4-ze2	(bear-duty)	'be responsible'
bang1-mang2	(help-business)	'help'
you1-mo4	(humor)	'joke'

phrase elsewhere. Thus, formally a VO sequence is either a VO compound, where the VO structure is word-internal and unaffected by any syntactic rule, or a VO phrase, whose VO structure is affected by one or more phrase-level rules.⁹ Therefore, in a given environment a type 3 sequence is never ambiguous in its status. To be more precise, when a VO sequence of type 3 is followed by another NP, it functions as a single transitive verb, as shown in (13a). The only alternative is to treat *dan1* and *xin1* as separate categories, each accessible to syntactic rules, as in (13b).

- (13) a. Ta1 [dan1xin1]_V ni3.
 he worry you
 'He worries about you.'
- b. Ta1 [dan1]_V [xin1]_{NP} [ni3]_{NP}.
 he carry heart you
 'He worries about you.'

Huang (1984) rejects (13b) according to his *phrase structure constraint* (PSC) that in Chinese a verb may not be followed by more than one constituent. Other independent evidence is also available. This structure of (13b) suggests that *dan1* is ditransitive, similar to verbs such as *gei3* 'give' and *qiang3* 'rob', with a direct object and an indirect object. Yet, the fact that *dan1*, unlike other ditransitive verbs (see [14]), cannot be separated from *xin1* in this particular usage (as in [15]) negates this possibility. Moreover, the fact that *dan1xin1* in 13 can have an aspect marker attached to it (see [16]) positively identifies it as an independent transitive verb.

- (14) Ta1 gei3 le ni3 xin4xin1.
 he give PERF you confidence
 'He gave you confidence.'
- (15) *Ta1 dan1 le/zhe/guo4 xin1 ta1.
 he carry PERF/PROG/XPRN heart he
 'You was/am/have worried about him.'
- (16) Ta1 dan1xin1 zhe ni3
 he worry PROG you
 'He is worrying about you.'

All of the syntactic tests for type 1 compounds, such as the A-not-AB question form in (17) and the yes-no question form in (18), among others, also confirm that transitive *dan1xin1* is a word.

- (17) q: Ni3 dan1-bu4-dan1xin1 ta1?
 you DAN not worry he
 'Are you worried about him?'
 a: (Bu4) dan1* (xin1).
- (18) q: Ni3 dan1xin1 ta1 mal?
 you worry he PTCL
 'Are you worried about him?'
 a: (Bu4) dan1* (xin1).

Elsewhere, however, *dan1..xin1* behaves like a VO idiom phrase, for they may easily be separated, as shown in (19)–(22), and are subject to various syntactic operations.

- (19) Ta1 dan1 le ban4tian1 xin1.
 he carry PERF half-day heart
 'He was worried for quite a while.'
- (20) Ni3 she2me xin1 ye3 bie2 dan1
 you what heart also don't carry
 'You don't have to worry at all.'
- (21) Zhei4 zhong3 xin1 ni3 bie2 dan1.
 this kind heart you don't carry
 'Don't you worry about such a thing.'
- (22) Ta1 dan1 shei2 de xin1?
 he carry who POSS heart
 'Who is he worried about?'

Those critical of strict lexical integrity might again suggest that *dan1xin1* be treated as a compound that allows certain (arbitrary) syntactic processes to access its lexical subparts *dan1* and *xin1*. The same arguments provided toward the end of section 2.2 and in note 6 apply here as well against this unprincipled violation of lexical integrity.

3. Synchronic solutions and ionization

From the historical perspective, Her (1992, 1993) interprets the idiosyncrasies of VO idioms and compounds as consequences of lexical diffusion (cf. e.g. Wang 1969; Chen and Wang 1975) in the lexicalization process and attributes the variation of VO sequences to the interaction between ionization and lexicalization, two competing processes. Compounds (type 1) would obtain where lexicalization prevails over ionization, while phrasal status (type 2) obtains when ionization prevails. When the competition between lexicalization and ionization is unresolved or ongoing, lexical status and phrasal status would coexist and type 3 dual status

obtains. While historical insights may certainly be relevant to synchronic accounts, historical mechanisms are not the same as synchronic processes. For instance, the fact that most prepositions in Modern Chinese emerged via the grammaticalization of their predecessor verbs does not suggest that synchronically prepositions should be listed as verbs and undergo a category-shift process. Precisely as Huang (1984) has suggested, there are three competing synchronic solutions: (1) ionization, (2) lexicalization, and (3) dual listing.

1. Ionization: VO sequences of dual status are listed as words only in the lexicon, with a reanalysis rule that relabels its two composing subparts as phrasal categories under appropriate circumstances.
2. Lexicalization: VO sequences of dual status are listed solely as phrases, which are lexicalized into words.
3. Dual listing: VO sequences of dual status are listed in the lexicon as both words and phrases.

Ionization was first suggested by Chao (1968) in his description of the phrasal behaviors of certain VO compounds; its theoretical implications in a synchronic grammar, however, were not made clear until Huang (1984). The ionization account has a type 3 VO sequence, for example *dan1-xi1*, listed only as a word in the lexicon. Its necessary phrasal status is considered the outcome of a synchronic reanalysis rule that splits, or ionizes, a word into two parts, *dan1* and *xin1* for example, and relabels them as V and N respectively.

The first undesirable feature of the ionization solution is that it distinguishes between type 1 VO compounds like *chulban3* 'publish' and type 3 compounds like *dan1xin1* even though formally they behave the same. In addition, while it must be barred from applying to type 1 compounds to avoid the overgeneration of (nonexisting) VO phrases out of type 1 compounds, it must optionally apply to type 3 compounds in order to generate their phrasal counterparts. More specifically, as Huang (1984: 70) notes, for type 3 VO compounds listed in the lexicon, ionization must be stated as obligatory when they function as phrases. Equally implausible is that when type 3 compounds function as words, ionization must be obligatorily barred; an ad hoc stipulation indeed.

Type 2 VO idiom phrases present another disconcerting dilemma. If type 2 phrases, such as *chi1..dou4fu4* 'flirt', are listed as words only, then ionization must distinguish between type 2, to which ionization applies obligatorily, and type 1 compounds, to which ionization is barred. This would also mean that there is a class of words, type 2 base forms, that are never used in the language as such. The better alternative is to list type 2 idiom phrases as phrases in the lexicon and thus avoid ionization

altogether. However, this is hardly satisfactory either, because now the grammar distinguishes two types of VO idiom phrases, one, type 2, that is listed in the lexicon, the other, type 3, that is generated by ionization. Again, such a distinction is unnecessary and unfounded as there is no principled difference in behavior between these VO idioms.

The most serious problem for ionization is that there is simply no general way to state this ionization process. A newly generated VO idiom phrase must be constrained in terms of semantic features and syntactic behaviors. As shown in the examples in Tables 2 and 3, the idiomatic meaning cannot be predicted from the composition of its parts. A couple of examples should suffice to illustrate the kind of necessary yet arbitrary syntactic constraints that ionization must impose on the newly generated phrase for the idiomatic meaning to obtain. As is well known, idiom phrases vary greatly in terms of their syntactic behavior (e.g. Wasow et al. 1983; Her et al. 1994), such as internal modification, quantification, definiteness, topicalization, ergativization, *ba* fronting, *bei* fronting, deletion, anaphora, etc. A few examples are given in (23)–(28). (Note that the # sign here indicates the nonexistence of the idiomatic reading expressed in the English translation.)

- (23) Ta1 dan1 le ban4tian1 xin1.
 he carry PERF half-day heart
 'He was worried for quite a while.'
- (24) #Ta1 fang4 le ban4tian1 xin1
 he release PERF half-day heart
 'He has been unworried for quite a while.'
- (25) Ta1 dan1 shei2 de xin1?
 he carry whose POSS heart
 'Who is he worried about?'
- (26) #Ta1 fang4 shei2 de xin1?
 you release who POSS heart
 'Who is he not worried about?'
- (27) Zhei4 zhong3 xin1 ni3 bie2 dan1.
 this kind heart you don't carry
 'Don't you worry about such a thing.'
- (28) #Zhei4 zhong3 xin1 ni3 bie2 fang4.
 this kind heart you don't release
 'Don't be unworried about this kind of affairs.'

Through ionization, $[dan1xin1]_v$ and $[fang4xin1]_v$ would turn into the idiom phrase $[dan1]_{v..}[xin1]_n$ and $[fang1]_{v..}[xin1]_n$ respectively. However, this cannot be the end of the story. For $[fang1]_{v..}[xin1]_n$ to have its idiomatic meaning, syntactic constraints must be specified; for

instance, *xin1* cannot be modified by a duration adjunct, as in (24), take a possessor, as in (26), or be topicalized, as in (28). Although [*dan1*]_v... [*xin1*]_n seems to be free from these constraints (see [23], [25], and [27]), it has its own unique set of syntactic requirements. Let's see a few more examples.

- (29) #*Xin1*, *ni3* *bie2* *dan1*.
heart you don't carry
'Don't you be worried.'
- (30) *Wan2xiao4*, *ni3* *bie2* *kai1*.
joke you don't open
'Don't you joke around.'
- (31) #*Ta1* *ba3* *xin1* *dan1* *le*.
he BA heart carry PERF
'He did worry.'
- (32) *Ta1* *ba3* *wan2xiao4* *kai1da4* *le*.
he BA joke open big PERF
'His joke went overboard.'

While [*xin1*]_n in the idiom [*dan1*]_v... [*xin1*]_n can be topicalized when modified by *zhei4zhong3* 'this kind' as in (27), it cannot be topicalized by itself (see [29]). Furthermore, it cannot appear in a *ba* construction, as in (31). *Wan2xiao4*, as in the idiom *kai1*...*wan2xiao4*, on the other hand, appears to be still freer, as in (30) and (32). To account for all the idiosyncrasies, the ionization rule would have to be broken down to as many individual sets of stipulations as there are applicable VO idioms. This would certainly render the ionization analysis vacuous.

In support of Chao's ionization and against Huang's lexicalization solution, Jin (1991: 43) offers his observation that native speakers "feel more comfortable" with a dual-status VO sequence, such as *dan1-xin1*, as a single transitive verb than as an idiom phrase, and also that a dual-status VO sequence can be used in a wider context as a word than as a phrase. However, this claim contradicts his own citing of Huang's (1986) statistics that only about 5% of VO sequences are transitive. In any event, the degree of native speakers' comfort or frequency and context of use have nothing to do with whether a linguistic expression is to be listed in the lexicon or to be derived.¹⁰ Jin (1991: 45-45) further confuses the issue by using examples of ionization as a mechanism of historical development as evidence for a synchronic process.¹¹

4. Lexicalization

Lexicalization would specify that a type 3 VO sequence, such as *dan1-xin1*, is listed only as an idiom phrase and that its word status is

the outcome of a reanalysis rule that fuses the two words in the idiom phrase into a single word. As it does to ionization, the conflicting status of type 1 and type 2 VO sequences presents a similar dilemma to lexicalization.

Consider type 1 VO compounds, such as *de2yi4* 'be proud', within the lexicalization analysis. There are two alternatives, as Huang is amply aware (1984: 73). One, they may be listed as phrases, as in [*de2*]_v..<[*yi4*]_n 'be proud', and lexicalization must be stated as obligatory. In this case, the grammar would create a class of VO idiom phrases listed in the lexicon but never used as such. Recall that there are also VO compounds of nonverbal categories, such as adverbs, like *zhuan3yan3* (turn-eye) 'instantaneously', and nouns, like *bang3tui3* (tie-leg) 'gaiter'. The grammar would be made too powerful to be revealing if synchronically a noun or adverb were to be obligatorily derived from a lexically listed verbal phrase. The better alternative is of course to list all type 1 compounds as words in the lexicon. However, now the grammar distinguishes two different types of VO compounds: one that is listed in the lexicon (type 1), and the other that can only be generated through lexicalization (type 3); but formally there is no difference whatsoever between them.

When it comes to type 2 VO sequences, which never behave as words, again there are two options. The worse option is to allow lexicalization to apply and overgenerate. To give an example, [*chi1dou4fu3*], the nonexisting verb will be generated through [*chi1*]_v..<[*dou4fu3*]_n the idiom phrase. The alternative is of course to bar lexicalization from applying to type 2 phrases. This indeed is Huang's choice (1984: 73). Now the lexicalization rule, though barred from applying to type 2 phrases, must apply to type 3 phrases in order to generate their counterpart VO compounds. Recall that one criticism of ionization is that ionization must be stated as obligatory when type 3 VO compounds function as phrases. The same criticism pertains to the lexicalization account: lexicalization must be stated as obligatory when type 3 VO phrases function as words. Also, the grammar now distinguishes two different types of VO idiom phrases: one barred from lexicalization (type 2), and the other allowed for optional lexicalization (type 3). Incidentally, as noted earlier, while the number of type 2 VO phrases is vast, type 3 dual-status VO sequences are scarce. The application of lexicalization to type 3 phrases is therefore at the cost of marking the majority of VO phrases as barred from lexicalization.

Like ionization, then, the most serious problem with the lexicalization solution is that there is simply no elegant way to generalize the semantic properties and syntactic behaviors of its output compound verbs. The output VO compounds, being full-fledged verbs, vary greatly in terms of gradeability, subcategorization requirements, aspect marking, selectional

restrictions on the object, etc., again to name just a few. Here are some examples.

- (33) Ta1 hen3 fang4xin1 ni3.
he very not worry you
'He doesn't worry about you at all.'
- (34) Ta1 (*hen3) fu4ze2 zhei4 jian4 shi4.
he very responsible this CLS matter
'He is (very much) in charge of this matter.'
- (35) Ni3 (*hen3) bang1mang2 ta1 (ban1 jia1).
you very help he move home
'You help him (move).'
- (36) Ni3 (*hen3) you1mo4 ta1 (*ban1 jia1).
you very tease he move home
'You tease him (a lot) (about his moving).'
- (37) Ni3 dan1xin1 ta1 hui4 si3.
you worry he will die
'You are worried that he may die.'
- (38) *Ni3 fang4xin1 ta1 hui4 si3.
you not worry he will die
'You are not worried that he may die.'
- (39) Ta1 zai4 dan1xin1 ni3.
he progressively worry you
'He is worrying about you.'
- (40) Ta1 (*zai4) fang4xin1 ni3.
he progressively not worry you
'He is not (being) worried about you.'
- (41) Ta1 hen3 dan1xin1 ni3 de jiao4yu4.
he very worry you POSS education
'He is very worried about your education.'
- (42) ?Ta1 you1mo4 ni3 de jiao4yu4.
he tease you POSS education
'He teases your education.'

In terms of gradeability, *fang1xin1* can be modified by an intensifier, as in (33), but *fu4ze2* and *bang1mang2* cannot, as in (34) and (35); as for subcategorization requirements, *bang1mang2* subcategorizes for an NP object and an optional VP compliment, as in (35), while *fang4xin1*, *fu4ze2*, and *you1mo4* subcategorize for an NP object only, as in (33), (34), and (36). *Dan1xin1* may subcategorize for an S compliment instead of an NP object, as in (37), but *fang4xin1* may not, as in (38); furthermore, while *dan1xin1* takes aspect markers, as in (39), *fang4xin1* does not, as in (40). And finally, while *dan1xin1* does not seem to impose any

selectional restrictions on its object, as in (39) and (41), *you1mo4* requires its object to be [+human], as in (42). These individual requirements of type 3 compound verbs are shown more completely below.

	Grade.	Subcat.	Asp.	Res. on object
dan1xin1	+	NP, VP, S	+	none
fang1xin1	+	NP	-	none
fu4ze2	-	NP	-	none
bang1mang2	-	NP, <NP VP>	+	human
you1mo4	+	NP	+	human

In short, in order to account for all the categorial, functional, and semantic idiosyncrasies of the output compounds, the lexicalization rule, like ionization, would need to have as many individual sets of stipulations as there are applicable type 3 VO phrases. Such ad hoc stipulations strongly suggest a lexicalist solution, where all categorial, functional, and semantic information is specified in each of the individual lexical entries of these compounds, exactly like other words.

5. Dual listing

The general argument against the process-oriented solutions, that is, ionization and lexicalization, is that they have little productivity and present tremendous difficulty in generalizing the idiosyncratic outcomes of their application, although on the surface they seem to offer a principled account. Given that the most straightforward solution for type 1 and type 2 sequences is to list them in the lexicon exactly as what they are: words and idiom phrases respectively, any process-oriented account, where the few type 3 sequences must undergo a synchronic process, would complicate the grammar unnecessarily. The obvious solution is thus to list type 3 sequences as both words and idiom phrases in the lexicon.¹²

VO verbs are of course not the only kind of compounds, nor are VO idioms the only type of idioms. All the other types of VO compounds (i.e. VO compound nouns and adverbs), VV compounds, and NV compounds, as well as other types of idiom phrases must be listed in the lexicon, quite independent of the analysis of the VO sequences discussed here. Clearly then, the listing of type 1 as words, type 2 as idiom phrases, and type 3 as both words and phrases requires only mechanisms that are already available in the grammar. This dual-listing solution is thus more a principled account than ionization and lexicalization in that it requires

no new or additional mechanism and thus does not complicate the grammar in any way.

Huang's only objection to dual listing is that it does not seem to offer "any independent principle which forces one to insert a phrase rather than a word in sentence-final position" (Huang 1984: 70). This would not be a problem, however, for the principle of subcategorization would ensure the correct selection (cf. e.g. Her 1991 [1990])¹³.

- (43) **Ta1 zai4 dan1xin1.*
 he progressively worry
 'He is worrying.'
- (44) *Ta1 zai4 dan1 xin1.*
 he progressively carry heart
 'He is worrying.'
- (45) *Ta1 zai4 dan1 shui3.*
 he progressively carry water
 'He is carrying water.'

Take *dan1xin1* the verb and *dan1..xin1* the idiom, for example. In the dual-listing solution, the syntactic and semantic requirements, idiosyncratic or not, of both can be precisely stated in the entry for a VO verb or idiom phrase. The lexical entry for [*dan1xin1*]_v specifies that it is transitive and that it specifically subcategorizes for an NP object or an S complement. When [*dan1xin1*] is inserted in a sentence-final position as in (43), and an NP object or an S complement subcategorized for by the verb cannot be fulfilled, the sentence is ruled out. Subcategorization requirements thus force the selection of the phrase [*dan1*]_v..*[xin1]*_n, as in (44), where it is well formed since the NP object subcategorized for by *dan1* is fulfilled by *xin1*. Furthermore, the sentence satisfies the syntactic requirements for the idiomatic reading *worry*. Sentence (45) is thus parallel to (44), except that (45) does not satisfy the idiom's requirement that the object NP be *xin1*.

6. Conclusion

To summarize, I have first distinguished three types of VO sequences, assuming the lexical integrity hypothesis of Huang (1984). While there are many VO sequences that function either as words only or as phrases only, a relative few are found to be of dual status and function as words in one context and as phrases elsewhere. Diachronically, all genuine VO compounds have indeed emerged via the lexicalization of VO phrases, while ionization also plays a significant role in creating VO idiom phrases.

Nonetheless, in a synchronic grammar of Chinese, I conclude, VO compounds and VO idiom phrases are simply listed in the lexicon as such; likewise, the few VO sequences that function as both words and phrases in different contexts are also listed as such, that is, as both words and phrases.

Received 12 June 1995
 Revised version received
 19 March 1996

National Chengchi University

Notes

- * Research on this paper was partially supported by a grant (NSC 85-2418-H-004-004) from the National Science Council of Taiwan, R.O.C. Also, I wish to thank the three anonymous reviewers of *Linguistics* for their detailed insightful comments. Correspondence address: Graduate Program in Linguistics, National Chengchi University, Taipei, Taiwan, ROC.

1. Both Huang (1984) and Jin (1991) cover the verb-resultative sequences as well; however, this paper concerns VO sequences only.
2. Semitransitivity refers to the requirement of a nonovert object. Semitransitive verbs in Chinese do not allow an objective postverbal NP and therefore the required object must be fulfilled via an anaphoric relation, for example topicalization, shown in (48), relativization, in (49), and cleft, in (50).

(46) *Ta na2shou3.
 he be-good-at

*He is good at.

(47) *Ta na2shou3 shu4xue2.
 He be-good-at math.

'He is good at math.'

(48) Shu4xue2, ta1 na2shou3.
 math he be-good-at

'Math, he is good at.'

(49) Ta1 na2shou3 de ke1mu4.
 he be-good-at COMP subject

'The subject that he is good at.'

(50) Ta1 na2shou3 de shi4 shu4xue2.
 he be-good-at COMP be math

'What he is good at is math.'

Her (1991, 1994) provides a more comprehensive description of their different behaviors, a formal account of such behaviors within lexical-functional grammar, and also an interactionist account of the occurrence of this variation in transitivity; the variation is attributed to the conflicting requirements of transitivity and intransitivity in lexicalization along two autonomous dimensions within syntax: the constituent structure and the functional structure.

3. Throughout this paper a VO sequence with word status only is transcribed continuously, such as *guan1xin1* 'to be concerned'; a sequence with phrasal status only is

written as V..O, e.g. *kail..dao1* 'to operate (surgally)'; and a sequence of possible dual status has a dash between V and O, e.g. *dan1-xin1* "to be worried", thus an abbreviation of *dan1xin1* plus *dan1..xin1*.

4. Echo questions can of course be formed with *she2me* replacing O in VO compounds, which simply means that the O component forms a phonological unit.
5. The notation $x^*(y)$ indicates that y is required for xy to be acceptable, while $x(*y)$ indicates that xy would be unacceptable.
6. "Perfective marker" is abbreviated as PERF; "progressive marker," PROG; "experiential marker," XPRN; "question particle," PTCL; and "possessive marker," POSS.
7. In the syntactic solution proposed by Sheu (1991) within categorial grammar, strict lexical integrity is indeed violated (James Huang, personal communication). The consequence is that syntactic rules must now be allowed to refer to nonlexical, nonsyntactic phonological units such as syllables, because the A-not-AB construction applies to nearly all disyllabic verbs, including temporarily borrowed foreign words, for example English *crazy*.

(51) Ni3 shuol tal CRA bu4 CRAZY?
 you say he CRA not crazy
 'Wouldn't you say he's crazy?'

The heavy price for compromising lexical integrity is thus the complication of grammar. The A-not-AB syntactic rule is now an exception, while all other syntactic rules refer to lexical or phrasal categories only. Second, there is a handful of VO verbs that allow only the VO-not-VO but not the V-not-VO question form, what Chao (1968; 426) calls "solid VO compounds." These verbs must be marked as exceptions to this syntactic duplication rule. While such arbitrary exceptions are not uncommon to morphological processes, they are rather uncharacteristic to syntactic processes.

8. Due to their idiomatic nature, it is largely unpredictable whether these VO idioms may undergo syntactic transformations, and if they may, what; also, there are individual constraints, as arbitrary as their idiomatic readings, on each transformation allowed. Nonetheless, the fact that their subparts can all be separated is sufficient evidence, again according to LIH, that they are phrases, not words.
9. In this formal sense type 3 is superfluous for in actual use a type 3 sequence is either a compound word, just like a type 1 sequence, or a VO phrase, like a type 2 phrase. Type 3 is thus identified only in terms of its phonetic form. The lexicalist solution of dual listing I argue for in section 4 captures this insight.
10. For instance, *scissors*, *trousers*, *lao3shil* 'teacher', and *lao3hu3* 'tiger' are arguably derived respectively from *scissor*, *trouser*, *shil* 'teacher', and *hu3* 'tiger', but the inflected or derived forms are obviously used more frequently and in wider contexts than the base forms.
11. To account for the transitive VO compounds that were historically of the [VO] structure, Jin (1991) attempts a remedy called "restoration," which specifies, "when the two subparts of them are separated by other words they simply restore their original phrasal status" (Jin 1991: 46). This idea of "restoration" inherits all the problems of the ionization account. Furthermore, in the lexicon, among all VO compounds listed, the ones that are restorable have to be marked as such, since restoration cannot apply to loan words like *you1-mo4* 'humor', which have no original phrasal status, but *you1 le tal yi1 mo4* 'teased him a bit' is indeed a phrase. And semantically what do the "restored" idiom phrases, e.g. *dan1..xin1*, "restore" to? Aside from the fact that there is no definite "original" status to restore to, syntactically or semantically, it is also

- entirely unfounded to assume that naive native speakers possess knowledge of the history of the language in this regard.
12. Given the increasing evidence that human language processing is often memory-intensive rather than processing-intensive, the lexicalist dual-listing solution, which is memory-intensive, should be preferred on psycholinguistic grounds even when process-intensive solutions, such as lexicalization and ionization, are equally valid on formal grounds.
 13. The principle of subcategorization exists in virtually all grammatical theories in various forms, for example in the *completeness and coherence conditions* in the theory of lexical-functional grammar (Bresnan 1982) or similarly in the *projection principle* in the mainstream transformational framework (Huang 1982).

References

- Bresnan, Joan (ed.) (1982). *The Mental Representation of Grammatical Relations*. Cambridge, MA: MIT Press.
- ; and Mchombo, Sam (1995). The lexical integrity principle: evidence from Bantu. *Natural Language and Linguistic Theory* 13, 181–254.
- Chang, Claire S.-H. (1991). Verb copying: towards a balance between formalism and functionalism. *Journal of Chinese Teachers Association* 26(1), 1–32.
- Chao, Yuen-ren (1968). *A Grammar of Spoken Chinese*. Berkeley and Los Angeles: University of California Press.
- Chen, Matthew; and Wang, William S.-Y. (1975). Sound change: actuation and implementation. *Language* 51, 225–281.
- Cho, Young-Mee Yu; and Sells, Peter (1995). A lexical account of phrasal suffixes in Korean. *Journal of East Asian Linguistics* 4(2), 119–174.
- Dai, John X.-L. (1990). Some issues on A-not-A questions in Chinese. *Journal of Chinese Linguistics* 18(2).
- (1991). The negator *bu* and a morphosyntactic analysis of A-not-A questions in Chinese. *Chicago Linguistic Society* 27(2).
- Du Bois, John (1985). Competing motivations. In *Iconicity in Syntax*, John Haiman (ed.), 343–336. Amsterdam: Benjamins.
- Her, One-Soon (1991 [1990]). *Grammatical Functions and Verb Subcategorization in Mandarin Chinese*. Taipei: Crane.
- (1991). Topic as a grammatical function in Chinese. *Lingua* 84(1), 1–23.
- (1992). Interaction and variation. Paper presented at the First International Conference of Chinese Linguistics, Singapore.
- (1993). Interaction: a new research direction in Chinese linguistics (in Chinese). *Newsletter of the National Chengchi University* 1, 103–134.
- (1994). Interaction of syntactic changes. In *Chinese Languages and Linguistics*, vol. 2: *Historical Linguistics*, 263–293. Symposium Series of the Institute of History and Philology No. 3. Taipei: Academia Sinica.
- ; Higinbotham, Dan; and Pentheroudakis, Joseph (1994). Lexical and idiomatic transfer in machine translation: an LFG approach. In *Research in Humanities* 3, Susan Hockey and Nancy Ide (eds.), 200–216. Oxford: Oxford University Press.
- Hsieh, Hsin-I (1989). History, structure, and competition. Paper presented at the Eighth International Workshop on Chinese Linguistics, POLA, University of California, Berkeley, March 20–21.

- (1992a). In search of a grammatical foundation for dialect subgrouping. In *Chinese Languages and Linguistics*, vol. 1: *Chinese Dialects*, 333–377. Taipei: Academia Sinica.
- (1992b). Cognitive grammar of Chinese: four phases in research. In *Proceedings of the National Science Council, Part C: Humanities and Social Sciences* 2(2), 234–249. Taipei: National Science Council.
- Huang, James C.-T. (1982). Logical relations in Chinese and the theory of Chinese grammar. Unpublished Ph.D. dissertation, MIT.
- (1984). Phrase structure, lexical integrity, and Chinese compounds. *Journal of Chinese Teachers Association* 19(2), 53–78.
- (1988). Modularity and explanation: the case of A–not-A questions. In *Proceedings of the Third Ohio State University Conference on Chinese Linguistics*, 141–169. Columbus: Ohio State University.
- Huang, Shuenfan (1986). Two studies in Chinese morphology. Paper presented at the Second International Conference on Sinology, Academia Sinica, Taipei, Taiwan.
- Jin, Xiaochun (1991). Modularity and Chinese compounds. *Journal of Chinese Teachers Association* 26(1), 33–47.
- Kaplan, Jeffrey (1995). *English Grammar: Principles and Facts*. Englewood Cliffs, NJ: Prentice Hall.
- Li, Charles; and Thompson, Sandra (1981). *Mandarin Chinese: A Functional Grammar*. Berkeley: University of California Press.
- Lu, Shuxiang (1982). *Zhongguo Wenfa Yaolue* [Essence of Chinese Grammar]. Beijing: Shangwu Yinshuguan.
- Mohanan, Tara (1995). Wordhood and lexicality: noun incorporation in Hindi. *Natural Language and Linguistic Theory* 13(1), 75–134.
- Newmeyer, Frederick (1991a). Functional explanation in linguistics and the origin of language. *Language and Communication* 11(1), 3–29.
- (1991b). O, what a tangoed web they weave *Language and Communication* 11(1), 53–62.
- Sadock, Jerrold (1991). *Autolexical Syntax*. Chicago: University of Chicago Press.
- Sheu, Yingyu (1991). Syntactic duplication in Mandarin: a categorial grammar approach. In *Proceedings of the Second International Symposium on Chinese Languages and Linguistics*, 347–363. Taipei: Academia Sinica.
- Starosta, S. (1988). *The Case for Lexicase*. London: Pinter.
- Wang, William S.-Y. (1969). Competing changes as a cause of residue. *Language* 45, 9–25.
- Wasow, Thomas; Sag, Ivan; and Nunberg, Jeffrey (1983). Idioms: an interim report. In *Proceedings of the XIIIth International Congress of Linguistics*, S. Hattori and K. Inoue (eds.), 102–115. Tokyo: CIPL.

