Functionalism and Chinese Grammar

功能學說
與
中文文法

Edited by
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CLTA Monograph Series

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This 'multigraph' is basically the result of the *Ohio Symposium on Chinese Linguistics* held at The Ohio State University, March 27-28, 1987. That year was indeed an unusual one for the Department of East Asian Languages and Literatures at the Ohio State University, because three specialists of Modern Chinese syntax were successively appointed visiting professors: James Tai of Southern Illinois University (before he joined the OSU faculty), Lu Jianming of Peking University, and Tang Ting-chi of the Tsing Hua University of Taiwan. It was thought early in that academic year that this would be a golden opportunity to host a small conference with participants from Chinese mainland, Taiwan, and the United States on a subject of common concern. Several specialists of Chinese syntax in this country as possible participants were consulted, and the responses were overwhelmingly positive. Consequently, the Symposium was planned, with strong support from both the College of Humanities and the Department, and it was decided that the Symposium be held during the short overlapping period after Professor Tang's scheduled arrival at Columbus but before Professor Lu's departure for Peking. Unfortunately, due to some completely unexpected complications in travel, Professor Tang eventually did not come, and the symposium had to be held without him, to everyone's regret.

The Symposium turned out to be very unique and successful in that it was conducted in a genuinely bilingual fashion and papers were leisurely presented and thoroughly discussed. Both those who presented papers and those who participated in the discussion expressed their satisfaction with the casual but stimulating way the Symposium was conducted. They also recognized that most of the papers carried profound theoretical and pedagogical implications and urged that, if possible, they should be published together in a single volume. It happened that the idea of establishing a monograph series for the Chinese Language Teachers Association had been floating around for quite some time. Thus, it seemed to be a most natural
thing to publish this collection of papers as a way to launch the monograph series.

We wish to thank all those who have helped make the publication of this volume possible. First of all, we are grateful for the strong support of the College of Humanities and the Department of East Asian Languages and Literatures at The Ohio State University. The support of the CLTA, particularly in the person of John Young, is also absolutely essential. In the process of producing the initial camera-ready copy, Mr. Wang Lianqing and Ms. Nikki Bado contributed the most. Most of the credit, of course, must go to the authors in this volume who first enthusiastically participated in the Symposium and later painstakingly revised and proofread their papers, as well as giving advice to us in the editing of this volume.

Frank F. S. Hsueh

Columbus, Ohio
May, 1989
INTRODUCTION

Grammatical theories in the past two decades can be grouped into two different general orientations, namely, formalism versus functionalism. While formalism focuses on the characterization of formal properties of natural languages, functionalism places emphasis on the communicative functions of linguistic forms. Subsumed under each orientation there are various theories. The former includes equational grammar (Sanders), Montague grammar (Dowty, Partee), relational grammar (Perlmutter), generalized phrase structure grammar (Pullum), lexical functional grammar (Bresnan), categorial grammar (Bach, Dowty, Partee), and various versions of transformational-generative grammar (Chomsky) such as standard theory, extended standard theory, revised extended standard theory, and government and binding theory. The latter includes case grammar (Fillmore), functional syntax (Kuno), role and reference grammar (Foley and Van Valin), discourse grammar (Chafe, Thompson), and cognitive grammar (Lakoff, Langacker).

In theory there should be no conflict between the two orientations, since the relationship between form and function in linguistics is complementary in nature. In practice, however, there has been a tension between the practitioners of the two orientations. On the one hand, the practitioners of formal syntax tend to insist on explanations in formal terms within the particular formal theory for which they have opted. They are thus forced to enrich the formal mechanism to account for syntactic phenomena controlled by pragmatic factors. This is especially the case among many current practitioners of the government and binding theory. On the other hand, the practitioners of functional syntax aim at explanations in functional terms, and tend to avoid rigorous formalization by appealing to intuitively plausible non-formal theory-independent generalizations. Moreover, the fundamental tenet of functionalism is that an understanding of the communicative functions of a linguistic form is not only a sufficient but necessary condition for a structural analysis of a linguistic form. Therefore, a
functionalist has a much broader scope of interest and concern than a formalist, for he is concerned with the function of a particular use of a certain linguistic construction in social interaction. Thus, rather than analyzing linguistic structures isolated from speech and social contexts, functional analysis directs its attention to the context-dependent nature of linguistic structure. Finally, the tension between the two orientations can be attributed to their respective implications concerning the nature of human mind. Chomsky's fundamentally important yet extremely controversial 'innateness' hypothesis of linguistic structures has fostered the view that linguistic structures are autonomous, independent not only of their communicative functions, but also of general cognitive capacities of the human mind. A functionalist takes the position that linguistic structures are the way they are because of their functions in the symbolization of reality for the purposes of communication. Thus, linguistic structures are only constrained by the human's general cognitive abilities rather than by a language-specific faculty as claimed in Chomsky’s 'innateness' hypothesis.

The central concern of this monograph, however, is not to take issue with Chomsky on his 'innateness' hypothesis or his government and binding theory. Nor is it intended to dispute the necessity and utility of formulating grammatical structures in Chinese within different theoretical frameworks. This monograph is primarily concerned with the semantic structures and cognitive bases underlying Chinese grammatical constructions, and with determining the pragmatic factors controlling the acceptability of the use of these constructions. Our purpose is to uncover some hitherto hidden structural relationships, semantic principles, and pragmatic contexts which govern the acceptability and appropriate uses of key grammatical constructions in Chinese. They have direct or indirect bearing on the teaching and learning of the Chinese language. The contributors in this volume are all involved in teaching different levels of Chinese to non-native speakers. As researchers, they are analysts of Chinese grammar and have been formalists in different periods of their academic lives dealing with different topics in Chinese grammar. Even in this volume on functionalism, they have adopted
different functional approaches. What links the contributors together in this volume is three fold: they all are teachers of the Chinese language, they are linguists, and they have as their central concern the relevance of linguistic analysis to the teaching of Chinese and are thus so guided in their analyses. The ten articles included in this volume are summarized in the following ten paragraphs.

Biq's article analyzes the use of *ye* on three discourse planes: (1) the propositional content of an utterance, (2) the epistemic world from which the speaker draws inferences, and (3) the speech situation in which the speaker is involved. She suggests that the function of *ye* is to mark the similarities shared by the juxtaposed entities from all three discourse planes. She also concludes that whereas *you* signals the "accumulation of relevant properties for the same entity," *ye* marks "same property/properties shared by juxtaposed entity."

Chu's article presents some of the recent works by his students on the interaction among syntax, semantics and pragmatics. The topics cover the selection of anaphora, the sentence final particle *le*, and the aspect markers -le and -zhe in different speech contexts. It is found that Mandarin discourse is organized in a hierarchical structure consisting of three tiers: clause, topic-chain, and paragraph. Thus, 'zero-anaphora' ties clauses together to form a topic chain; pronouns mark the beginning of a new topic chain; lexical NPs introduce a new topic at the beginning of a paragraph. At the level of semantics, the sentence final particle *le* indicates change of state. At the level of pragmatics, it also serves to indicate the end of a discourse unit, be it a topic chain, a paragraph, or an even longer unit. Similarly, at the semantics level, the verbal suffix -le marks the perfective aspect of an action verb, but at the discourse level, it may be used to indicate temporal or logical precedence even with state verbs such as *you*. With regard to the intricate interplay between the sentence final *le* and the verbal suffix -le, it is observed that the presence of the latter may sometimes serve to withhold the use of the former. As to -zhe, Chu claims that semantically it is a durative aspect marker and syntactically it is a subordinative marker. Here, he presents
an interesting array of pragmatic interpretations of *-zhe* when it is in construction with various types of verbs.

Hsueh’s article on the *ba* and *bei* constructions refutes their traditional interpretations as 'disposal' and 'passive' constructions respectively. Hsueh proposes that they can be abstracted as "A *ba* B + C" and "A *bei* B + C," where A and B stand for two nominal expressions, and C is a descriptive statement. Thus, contrary to the commonly held view that C must contain an action verb or predicate, Hsueh demonstrates with clear evidence that C must be a descriptive expression about the condition of B as a result of a certain action in the *ba* construction and about A in the *bei* construction. Furthermore, he considers B in the *ba* construction to be the primary topic, with A to be the secondary topic. In the *bei* construction, however, B is the primary topic and A the secondary one. The intriguing interaction between the constructions can be understood by their shared semantic specification in C in conjunction with the different roles played by A and B in respect of the topichood in discourse. With his proposed semantic and functional specifications as described above for the *ba* and *bei* constructions, Hsueh states a set of corollaries for each of the two constructions as some of the theoretical consequences. Each of the corollaries is supported by a set of examples, some of which have heretofore escaped the eyes of most Chinese grammarians.

Light’s article proposes to 'close the door' for the recalcitrantly elusive problem of *-zhe*, especially when accompanied by *ne*. The proposed analysis contains a couple of savory ingredients as one can find in French *haute cuisine*. The main ingredient is the concept of 'core meaning.' Light hypothesizes the semantic feature [inertia] to be the core meaning of *-zhe*. Coupled with Jakobsonian 'markedness convention,' Light shows that the various meanings of *-zhe* can be determined by its core meaning and the kind of verb with which it occurs, and its relation to the core meanings of other aspectual particles. As if on a Cartesian plane, syntagmatic line and paradigmatic line intercept to yield *-zhe* various values. The pedagogical conclusion he draws for the teaching and learning of Chinese is insightful and refreshing.
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Lu Jianming's article examines various syntactic functions of phrases involving measure words in Chinese. He observes that a number of constructions in Chinese cannot be grammatical without a concomitant measure phrase either as part of the NP or as part of the VP. On the other hand, a number of constructions can only be grammatical when they occur without measure phrases. This state of affairs seems to indicate that for certain semantic or discourse functions, a Chinese sentence requires a nominal measure phrase or a verbal measure phrase to give a proper quantification to the event denoted. On the other hand, for certain other speech situations, when either an indefinite or generic statement is sufficient, the presence of a measure phrase would render the sentence unacceptable. At the end of the paper, Lu Jianming touches on the function of the ba construction. The fact that many ungrammatical sentences with indefinite or generic direct objects following indirect objects after the verb can be rendered grammatical by placing direct objects before the verb in the ba construction suggests that perhaps one of the functions of the ba construction is to definitize, an effect akin to quantification of an event in time.

John Lu gives a brief history of modern linguistics as a science, focusing on the development of modern syntax from Saussurian structuralism to Chomskyan formalism. As pointed out by him, the rise (or rediscovery of the Praguan theory) of functionalism in mid-1970's in North America is due to the realization by syntacticians that in numerous areas of syntax, the acceptability of a construction is conditioned by pragmatic functions. Lu makes an interesting observation that it is during this period that Li and Thompson, Tai, Teng, and others began to shift their attention from a transformational approach to a functional approach. In conclusion, Lu urges that the study of Chinese syntax incorporate both approaches to help the continuing development of linguistics as a science.

Tai proposes a new framework for the study of Chinese syntax. The framework is named Cognition-Based Functional Grammar to capture its two main methodological convictions. First, it is functional in that formal syntactic constructions exist primarily as a result of the symbolization of
reality for communication purposes in natural languages. Second, it is
cognition-based in that the semantic principles which motivate formal
syntactic constructions are rooted in the human's conceptualization of the
physical world anchored in time and space in different cultural contexts. In
essence, Tai proposes a framework which attempts to reveal, independent of
grammatical categorization based on European languages, the
conceptualization principles which underlie Chinese grammar.

Hsieh's paper links Tai's paper in three important ways. First, taking
Quine's view that language creates the ontological world, Hsieh shows that
the Chinese language does reflect the culturally determined ontology of the
Chinese people through a creative use of time, space, or other cognitive
concepts in forming its peculiar imagery. Hsieh thus supports the Sapir-
Whorfian linguistic relativism, which Tai has rejected in favor of a non-
objectivist approach. Second, Hsieh refines Tai's temporal sequence principle
as an iconic principle by dividing time into real, inferred, and imaginary. Thus,
Hsieh extends the explanatory value of Tai's temporal sequence principle in
Chinese word order. Third, Hsieh proposes that a grammar consists of two
types of principles, iconic and abstract, which are in constant competition. He
further suggests that some languages are more iconic, while others are more
abstract. Since Tai's framework focuses on finding cognitive and functional
motivations for syntactic constructions, Hsieh reminds Tai of the equal
importance of the logico-mathematical structures governing Chinese
grammar.

Teng's paper studies the 'Agent-Agent' causatives in Chinese, which
have heretofore received scanty analysis. These constructions involve
causative verbs such as shi, jiao, and rang. The literature dealing with Chinese
causatives has so far been limited to those causatives involving the
relationship between an action and the resutlative state as expressed profusely
in resultative verb compounds, resultative complements constructed with de,
and in the ba and bei constructions. Teng's study thus leads us to a relatively
untrodden area of causatives in Chinese. The category or categories of
causatives represents one of the most important cognitive bases underlying
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semantic and syntactic structures of natural languages, especially in Chinese. Teng's study thus complements both Hsueh's study of the ba and bei constructions and Tai's discussion of the cognitive basis of Chinese causatives.

The last paper in this volume is Tsao's article, in which Tsao examines previous analyses of the lian...ye/dou construction and claims that it is misleading to analyze the construction as a focus construction. Tsao proposes that the lian constituent is always a topic, primary or non-primary, and that semantically the lian constituent in conjunction with the following dou or ye is to identify the class of things in which the entity designated by the lian constituent is the least expected member. Furthermore, Tsao proposes a scheme to analyze a simple Chinese sentence according to how many topics it has. Tsao has been a hardcore functionalist in Chinese syntax, being concerned primarily with the role of topic in Chinese discourse and grammar. In this paper, he has extended the application of the notion of topic to the construction in question. By making the distinction between primary and non-primary topics, Tsao and Hsueh complement each other in their respective exploration of the function of topic in Chinese grammar.

The ten papers in this volume, of course, do not subscribe to one single brand of functionalism. Each paper has its own functional perspective(s). The various perspectives cast in these ten papers can be roughly grouped into three levels of functionalism, namely, structural functionalism, pragmatic functionalism, and cognitive functionalism. Structural functionalism seeks to understand the function of a certain grammatical unit in terms of its syntagmatic and paradigmatic role in the whole or a subpart of the grammatical system to which it belongs. Light's paper is a clear example of structural functionalism. Pragmatic functionalism, exemplified by Biq's paper in this volume, aims to understand the multiple functions of a syntactic unit and thereby accounts for its meanings and uses on different planes of discourse. Cognitive functionalism, epitomized in Tai's paper, strives to uncover the cognitive categories underlying the semantic, and hence syntactic, structures in a given language. Some of the papers cross two or even three levels. For instance, both Hsueh's and Chu's papers cross from
structural functionalism to pragmatic functionalism, with the former more on the side of structural functionalism and the latter more on the side of pragmatic functionalism. Teng's paper is primarily based on structural functionalism but also touches on cognitive functionalism.

Regardless of the different functional perspectives of the papers and their respective focus at different levels of functionalism, they all share the view that formal explanations are not sufficient. They hold that genuine explanations for grammatical phenomena can be constructed mostly through functional analyses. They believe that functional explanations are undoubtedly much superior to complicated formal explanations for the purpose of teaching Chinese. It is therefore the hope of the Editors and the contributors that this volume can provide the teachers of Chinese as a second language some useful perspectives which are of direct pedagogical relevance.

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May 1989
Ye as Manifested on Three Discourse Planes:
Polysemy or Abstraction?

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A. INTRODUCTION

It has been pointed out as early as Wang (1947) that certain Mandarin lexical items that pertain to logical reasonings, such as cài (才), jiù (就), yóu (又), yě (也), and dōu (都), illustrate multiple uses in diverse contexts. Each of these words can signal different meanings by functioning as different sorts of constituent in the sentence. Although most of these words can function as conjunction markers, both Wang and Chao (1968) identify them as adverbs, because these words consistently occur at the pre-verbal, post-subject/topic position in a sentence.

The most interesting aspects of these adverbs are the semantics within each case and across all cases. First, are the multiple uses of each adverb related to one another? If so, how? Are all of them contextual variants of one abstract core meaning (the 'abstraction approach'), or is it rather that one of the uses is taken as the basic meaning and other uses are derived from it (the 'polysemy approach') (cf. Sweetser (1986))? Second, since multiplicity is found in all of these adverbs, what explains this regularity? What exactly is the recurring pattern across these adverbs of diverse semantic orientations? If there is indeed systematicity, what does it tell us about semantic structure and semantic development in general?

Early studies do not explicitly distinguish the 'abstraction approach' from the 'polysemy approach' when they deal with the semantic relatedness among the uses of each adverb. Chao tackles the issue by informally subcategorizing the diverse uses under one single lexical entry for each adverb. Alleton (1972) establishes a unified taxonomy for seven adverbs by distinguishing three 'functional values' for each word. Since then, the adverbs that have been studied most extensively are cài and jiù. Tsao (1976) points out that discourse 'expectations' impose pragmatic constraints on the use of cài. In both Paris (1981) and Biq (1987), cài and jiù are thoroughly contrasted with each other both semantically and pragmatically. In Biq (1987, 1988) abstractionist analyses for cài, jiù, and yóu are implicitly proposed. It is suggested that each lexical item possesses a core meaning, from which the multiple uses are derived.
Recent literature has paid abundant attention to *yē* as well. In both Paris (1979) and Paris & Tamba-Mecz (1984) *yē* is examined as the latter part of some correlative conjunction constructions; thus the discussions in these two papers are not focused on the multiple uses of the adverb. Ma (1982), however, focuses entirely on the semantics of *yē*. Ma points out that what *yē* signifies in its various uses is not merely a juxtaposition of items, but rather the similarity between the items under juxtaposition. In relation to this argument, Shen (1983) notes that the similarity between the juxtaposed items will not be significant unless there are differences in other aspects between them. Ma further distinguishes another use of *yē*, i.e., the emphatic use that characterizes the tone of voice called *wéiwán* (委婉) 'roundabout, tactful' in Chinese. However, the relationship between the use for 'similarity in juxtaposed items' and the use for 'roundabout, tactful tone of voice' is not addressed.

The aim of this paper is twofold: to examine the lexical structure of *yē*, and to use it as a base to discuss the abstraction vs. polysemy debate. In particular, I attempt to establish a semantic connection between the less understood emphatic use of *yē*, and its other uses which are understood more thoroughly. I will also discuss how the semantic connections among the diverse uses should be characterized theoretically.

In the following discussion, I will make no attempt to give an exhaustive account of the possible meanings of *yē*. Only a sketch is presented here. This sketch, however, consists of a substantial subset of the meanings most often cited in dictionaries and in grammar books. Briefly, I distinguish three types of use for *yē*: (1) symmetric juxtaposition, (2) scalar inclusiveness, and (3) evaluative downtoning. This triple use of *yē* applies on three discourse planes that respectively pertain to (1) the propositional content of an utterance, (2) the epistemic world from which the speaker draws his/her hypotheses, inferences, and speculations, and (3) the speech situation in which the speaker is involved. I suggest that a function of marking the similarity shared by the juxtaposed entities can be abstracted from all three uses of *yē*. However, I also discuss arguments against the abstraction approach as the better approach in treating the semantics of *yē* and other Chinese adverbs of similar behavior.

**B. SYMMETRIC JUXTAPOSITION**

The first type of *yē* is fairly straightforward and has been discussed in all the relevant literature. *Yē* points to the similarity between two or more values that are juxtaposed with one another in a sentence. These juxtaposed values
can be expressed by any constituent in the sentence (cf. Shen (1983)). Consider examples 1 to 3.

1. (subject juxtaposed)
   大人睡觉，小孩也睡觉。
   Dà rén shuì jiào, xiǎoháí yě shuì jiào.
   big person sleep sleep, child sleep sleep
   'Adults sleep; children sleep, too.'

2. (object juxtaposed)
   他们会说中国话，也会说英文。
   Tāmén huì shuō Zhōngguóhuà, yě huì shuō Yīngwén.
   they know-how speak Chinese, know-how speak English
   'They can speak Chinese; they can also speak English.'

3. (temporal adverb juxtaposed)
   这个人昨天来了，今天也来了。
   Zhègè rén zuòtiān lái le, jīntiān yě lái le.
   this person yesterday come PRT today come PRT
   'This person came yesterday; he came again today.'

In each of the examples above, only members of one single syntactic category are juxtaposed with each other. However, juxtaposition can involve more than one syntactic category (or rather, semantic type). 4a. and 4b. are examples.

4. (subject and verb juxtaposed)
   a. 小孩子大了，房屋也旧了。
      Xiǎoháizi dà le, fángwū yě jiù le.
      child big PRT house old PRT
      'The children grew up; the houses became old, too.'
   b. 雨停了，太阳也出来了。
      Yǔ tíng le, tài yáng yě chū lái le.
      rain stop PRT sun come-out PRT
      'The rain stopped; the sun came out, too.'

Notice further that yě can be used not only with the later members of a juxtaposition, but also with the first member. This 'yě... yě...' construction is what Chao refers to as his first type of 'correlative conjunction,' with the same word repeated as correlatives.
5. 碗也洗了，桌子也擦了，还有什么没做的？
Wǎn yě xǐ le, zhùozi yě cā le, hái yǒu shěnmé méi zuò de?
bowl wash PRT table wipe PRT still have what NEG do DE
'The dishes are washed; the table is wiped, too. What else is there to
do?'

This points to a difference between Chinese yě and English 'also.' Since
'also' only occurs with the later members of a juxtaposition, that juxtaposition
is asymmetric, with later members as a follow-up, supplementary to the first
member. On the other hand, since yě is not restricted to the position
immediately preceding later members of a juxtaposition, it does not
necessarily render the juxtaposition asymmetric; all members of the
juxtaposition are ordered as equals.

The juxtaposition of two or more values may sometimes stretch over a
number of sentences or even over larger conversational or textual units such
as paragraphs. Thus, the first member(s) of a juxtaposition may not
immediately precede the sentence in which yě occurs, and it requires a
comprehensive understanding of the text to identify the members of this kind
of juxtaposition. However, the juxtaposed members are always entities from
the propositional content (be it a smaller unit, such as a sentence, or a larger
one, such as a paragraph). Thus, we may conclude that the first type of yě
projects similarity in a symmetric juxtaposition of two (or more) values all
drawn from the propositional content.

C. SCALAR INCLUSIVENESS

The second type of yě pertains to its function as a scalar particle. Like other
scalar particles in Mandarin such as cáo, jiù, yòu, dòu, or those in English such as
'even,' 'only,' or 'just,' yě conveys implicatures with respect to certain values
designated in the sentence in terms of a scale where this value and alternate
values are ordered according to extra-linguistic standards.

When yě operates as a scalar particle, it continues to mark a similarity
between the members of a juxtaposition. However, since the juxtaposed
members now are differently ranked values on a pragmatically ordered scale,
this juxtaposition is an asymmetric one. There are two sub-groups of this
type.
C.1. With Expressions Denoting Extremity

First, the scalar yē often occurs with adverbial expressions denoting extremity. This corresponds to Chao's second type of 'correlative conjunction,' which has different words as correlatives. The liàn (连)...yē/(dōu) (也/都) construction and the concessive constructions respectively discussed in Paris (1979) and Paris & Tamba-Meca (1984) fall in this group. The capitalized expressions in 6 through 10 exemplify some of these adverbials.

6. 就算你请我坐汽车去，我也不去。
   JIŪSUĀN nǐ qǐng wǒ zuò qīché qù, wǒ yē bù qù.
even you invite I ride car go | NEG go
   'Even if you offer me a free ride, I still won't go.'

7. 我宁可自己去，也不要让你代表我去。
   Wǒ NÍNGKE zìjǐ qù, yē bù yào ràng nǐ dài bǐ ào wǒ qù.
even I rather self go NEG want let you represent I go
   'I'd rather go by myself than let you represent me.'

8. 甚至隔壁的老王也买了新房子。
   SHĒNŽHĪ gěi de Lào wáng yē mǎi le xīn fáng zì.
even next-door NOM old Wang buy-ASP new house
   'Even Old Wang from next door bought a new house.'

9. 连他的敌人也不得不佩服他。
   LIĀN tā de dírén yē bù dé fēi tā.
even his/her enemy nothing-but admire 3rd/sg
   'Even his/her enemy had to admire him/her.'

10. 没有人在家，你再敲门也没用。
    Méi yǒu rén zài jiā. Nǐ zài qiāo mén yē méi yǒu yòng.
no person at home you again knock door no use
    'There's nobody home. There is no use in knocking on the door.'

In each sentence the constituent (ranging from an NP to a clause) headed by these (capitalized) adverbial expressions represents an extreme value. This extreme value is juxtaposed with alternate values which, according to extra-linguistic standards, are ranked as 'less extreme,' 'more typical,' or 'expected' on the scale. Yē signals a similarity between them: the extreme value designated in the sentence is similar to the more typical alternate values in that both of them share the properties designated by the main predicate immediately following yē. In other words, before the juxtaposition, only the
more typical values form a set which has the property designated by the main predicate. Now after the juxtaposition signaled by (environmental), the extreme value designated in the sentence is included in this set despite its extremity, atypicality, or unexpectedness. This is the reason for the term 'scalar inclusiveness.'

Notice that in addition to the shift from symmetric to asymmetric juxtaposition, the first type of  and the second type of  differ in the discourse planes on which the juxtaposition can operate. The first type operates on entities drawn from the propositional content, as pointed out in section B. The scalar  however, can not only operate on entities drawn from the propositional content, but can also project juxtaposition in the epistemic world.

Sweetser (1982, 1986) points out that when used in speech, many types of lexicon in natural languages can operate ambiguously at three different levels: the propositional content, the epistemic world, and the speech-act situation. Modals such as 'must' in English are primary examples, but conjunctions and some 'speech-act' verbs possess the same ambiguity. Schiffrin (1987) offers similar observations, especially when she discusses the uses of English 'because' and 'so' in discourse. She characterizes the three levels as (1) ideational structure (fact-based), (2) information state (knowledge-based), and (3) action structure (action-based), respectively, and calls them the three 'discourse planes.'

Some of Sweetser's examples are repeated here to illustrate the differences:

11 a. John must be home by ten: Mother won't let him stay out later. ('root'/deontic, or propositional)
b. John must be home already: I see his coat. (epistemic)
c. I must say .../I must tell you that ... (speech-act)
(Sweetser 1982)

12 a. If John goes, Mary will go. (propositional)
b. If John went, Mary (probably) did too. (epistemic)
c. If you're headed for the cafeteria, there's better food at the deli. (speech-act)
(Sweetser 1986: 530)

Scalar  in Mandarin can operate either on the plane of the propositional content or on the plane of the epistemic world. Recall that the two juxtaposed members in this case are the extreme value and the more typical
value. The extreme value is part of the propositional content, but the more
typical value is not necessarily part of the propositional content. When it is,
the scalar yě operates on the plane of propositional content simply because
both of the (asymmetrically) juxta posed values are entities drawn from there.
However, the more typical value can be an entity that exists in the non-
actual, hypothetical world that is only significant in inferential reasoning.
When this is the case, the (asymmetric) juxta posed projection by yě operates
in the epistemic world.

The epistemic type usually takes place when the yě sentence is used
hyperbolically. Take 6 as an example. In this case the speaker refuses to go
even when (s)he is offered a free ride. A juxta posed on the propositional
plane would be the case in which the interlocutor in this particular situation
indeed extends an invitation to go but asks the speaker to go on his/her own.
On the other hand, the juxta posed operates on the epistemic plane when
nobody (in the discourse) really extends any invitation for going and 6 is only
uttered as a hyperbolic comment with respect to the place at issue. In this
latter case, both the extreme value and the more typical value are juxta posed
with each other only in a hypothetical fashion in order to derive the intended
expressive effect.

The second sub-type of scalar yě, in which it co-occurs with expressions
denoting universality, has similar dual applications.

C.2. With Expressions Denoting Universality

Another group of words which often occurs with the scalar yě consists of
several kinds of universal quantifiers. They can be NPs denoting universal
negation that contain the numeral yī 'one' and negation. They can be wh-
words such as shéi (谁) 'who, chénme (什么) 'what,' zěnme (怎么) 'how,' nǐr
(哪儿) 'where.' Finally, they can be adverbials such as yòngyuǎn ( 永远)
'forever,' and fánzhěng (反正) 'in any case,' which all denote universality in
one way or another. Examples of this sub-group are given in 13 through 19.
(Universal quantifiers are capitalized.)

13. 他坐在那儿，一句话也不说。
    tā zuòzài nàr，yī-júhuà yě bù shuō.
    (s)he sit at there one-M speech NEG speak
    '(S)he sits there without saying (even) a word.'
14. a. 这种地方，谁也不要去了。  
Zhè-zhòng diān fāng, shéi yě bù yào qù.  
'this-M place who NEG want go'  
'Nobody wants to go to this kind of place.'

b. 谁也知道哥伦布发现了美洲。  
SHÉI yě zhīdào Gélún bù fāxiàn-le Měi zhōu.  
'everybody knows that Columbus discovered America.'

15. 他说他什么也不要。  
Tā shuō tā SHÉNMÉ yě bù yào.  
'she say (s)he what NEG want'  
'(s)he said (s)he didn't want anything.'

16. a. 这个字我怎么写也写不好。  
Zhè-ge zì wǒ ZÉNMÉ xiě yě xiě bù hǎo.  
'this-M character I how write write NEG well'  
'I can never write this character well no matter how I write it.'

b. 你怎么找也得把他找着。  
Nǐ ZÉNMÉ zhǎo yě de bā tā zhǎo-zhāo.  
you how search must BA (s)he search-attain  
'You have to find him/her no matter how.'

17. a. 放假的时候，我哪儿也没去。  
Fàng jià de shí hou, wǒ NĀR yě méi qù.  
have-holiday NOM time I where NEG go  
'I didn't go anywhere during the holidays.'

b. 在美国哪儿也有可口可乐的广告。  
Zài Měi guó, NĀR yě yǒu Kěkǒkèlè de guāng gào.  
in America where have Coca-Cola-NOM advertisement  
'In America, there are Coca-Cola ads everywhere.'

18. 我永远也不会忘记你。  
Wǒ YÓNG YUĀN yě bù huì wàng jī nǐ.  
'I forever NEG will forget you'  
'I'll never forget you.'

19. a. 我反正也不走，可以慢慢的看这本书。  
Wǒ FĀN ZHENG yě bù zǒu, kěyǐ mān mān de kàn zhěi-běn shū.  
'I anyway NEG leave, may slowly-DE read this-M book'  
'I am not leaving in any case. I can take my time to read this book.'
Universal quantifiers can occur in both affirmative and negative sentences. However, *yě* occurs with them more often in negative sentences than in affirmative sentences. Co-occurrence with universal quantifiers is not a problem once universality is taken as a process of scanning every value in the domain that is set up pragmatically. After comparing and contrasting these alternate values with one another, one can draw a similarity from them despite their differences. Universality can thus be regarded as a sub-type of scalar inclusiveness, provided that the values under consideration differ in scalar ranking (according to extra-linguistic standards). Moreover, just as with expressions denoting extremity, asymmetric juxtaposition with universal quantifiers operates on the plane of propositional content if the universality is taken 'literally'. Otherwise, it operates on the plane of the epistemic world if the universality is taken 'figuratively' as a hyperbole. For example, 14b is (pragmatically) ambiguous between the literal interpretation and the hyperbolic interpretation.

A more interesting issue with respect to universal quantifiers is the fact that *yě* goes with negative universality much more than with positive universality. Another logic-oriented adverb in Mandarin, *dōu* 'all,' can not only substitute for *yě* in 13 to 19, but can also occur with affirmative universality where *yě* would be unacceptable. Compare the (a) sentence with the (b) sentence in each of the following examples:

20 a. 他什么都吃。
Tā SHÉNME dōu chī.
(s)he what eat
'(S)he eats everything.'

b. 他什么也吃。
Tā SHÉNME yě chī.

21 a. 我哪一天都可以。
Wǒ NEI-yī-tiān dōu kěyí.
I which-one-day OK
'Whichever day is fine with me.'

b. 我哪一天也可以。
?Wǒ NEI-yī-tiān yě kěyí.
22 a. 他在哪儿精神都很好。
   Tā zài NĀR jīngshén dōu hěnhǎo.
   (s)he at where spirit INT good
   '(S)he is always in good spirits wherever (s)he goes.'

b. 他去哪儿精神也很好。
   Tā zài NĀR jīngshén yě hěnhǎo.

Earlier studies such as Su (1984) have noted this negative vs. affirmative discrepancy between the two adverbs, but have not provided any account for it. I want to leave this question aside for the time being. I will come back to it after discussing the third type of yē.

D. EVALUATIVE DOWNTONING

I call the third type of yē 'evaluative downtoning,' which in earlier literature is taxonomized under categories that are entitled 'emotional adverb' (Wang), 'evaluative adverb' (Chao), or 'modal marker' (Alleton and Paris). However, this type of use is never seriously examined in conjunction with the two former types in all of the literature, including Ma (1982).

For the third type of yē, there is still a juxtaposition and there is still a similarity drawn from this juxtaposition. This time, however, the juxtaposition is not between two entities from the propositional content, nor between two entities from the epistemic world. Rather, yē quantifies the whole sentence, taking that which is represented by the entire proposition, and juxtaposing it with that which is built up as the expectation in the discourse. This type of juxtaposition, in other words, operates on the third discourse plane, i.e., the speech-act situation.

When two entities drawn from the propositional content are considered similar, this similarity is established on the basis of some commonly held, verifiable criteria observed by the speaker. When two entities drawn from the hypothetical, epistemic world are considered similar, this similarity is established on the basis of the speaker's belief and knowledge as (s)he makes inferences on all kinds of possibility and probability. When two entities drawn from the speech-act situation are considered similar, this similarity is established on the basis of the speaker's evaluative or expressive attitude toward the subject-at-issue. The third type of yē, then, marks a similarity perceived on the part of the speaker between what (s)he him-/her-self is saying (the asserted value) and what is expected under the circumstances (the expected value).
In addition to the 'subjective' characteristic and the 'speech-act' orientation, the third type of juxtaposition is also asymmetric in the sense that, despite the acknowledged similarity between the two juxtaposed values, there is the connotation of 'downtoning' the asserted value as if it does not measure up with the expected value.

A distinction between uptoner and downtoner is suggested by studies on English scalar particles (Brugman 1984, Traugott 1986). Scalar particles that focus on the high end of a scale are uptoners, such as 'very' in 'very difficult.' On the other hand, downtoners focus on the low end of a scale, such as 'just' in 'He is just a linguist.' But 'very' can also be a downtoner, such as in 'the very thought of waiting in the line.'

The evaluative  yě is a downtoner. By downtoning the co-occurring utterance, thus reducing the face value of the assertion,  yě conveys the speaker's note of the discrepancy between the reality of the described situation and what was expected of it.

23 to 25 are examples of the evaluative  yě that I draw from Chen Ruoxi's Er Hu 'A Tale of Two Hu's,' a story in Chinese which I was reading at the time of writing this article. In each case the English translation of the sentence in which  yě occurs is underlined. The English words in parentheses represent my attempt at paraphrasing what  yě conveys in the original Chinese texts.

23. “这个年纪的小孩”，他向老米建议，“不必管的太紧，美国的小孩十几岁时都无法无天，长大了也就懂事。”
Zhège niánjì de xiǎoháì, tā xiàng Lǎo Mǐjiànyì, ‘bù bì guǎndè tái jīn. Méiguó de xiǎoháì, shìjì shì shí hou wú fán wú tíān, zhǎngdà le yě jiù dǒng shì.’
“但愿如此。”

Dànyuàn rén rú cǐ
老米的口气明显的缺乏信心。
Lǎo Mǐ de kǒu qì míng xìǎn de què fá xīn xìn. (Chen: 8-9)

24. “景先今天跑了两个坟场，找到了一块地，说是很不错，是不是?” 媳妇望着丈夫，示意的换了话题。
“我也不懂，不过坟场的人都说那块地很好。”
她丈夫老实的承认。
Jīngxiān jǐntiān pào le lǐàng ge fēnchāng, zhāo-dào le yī kuāi dì, shuō shì hěn bù cuò, shì bù shì hǎi? Xīfu wǎng zhè zhàng fū, shì yī de huán lè huá tí. Wò yě bù dōng, bù yuè fēnchāng dé rén dōu shuō, nǐ kuāi dì hěn hào. Tā zhǎng fū láo shì de chēng rén. (Chèn: 155-156)

Jīngxian went to two cemeteries today and found a plot. They said it was a good one, didn’t they? The daughter-in-law looked at her husband to suggest a change of topic. ‘I don’t (really) know how to choose a good plot (either), but the people at the cemetery all said it was a good plot.’ Her husband admitted it honestly.

25. 在美国，自行车适合用来健身，在此地却有私家汽车的功用，载人又载货。骑术高的犹如表演特技，在人群和车辆间游窜。它们与汽车争途，造成险象环生，却也未酿成车祸。

Zài Měiguó, xìngzhǐ shì hě yǒng lái jiàn shēn. Zài cǐ dì quē yòu sī jiā qì chē de gōngyòng, zài rén yòu zài huò. Qīshū gāo yì yǒu rú biǎo yè tǐ, zài rén qūn hé chē liăng jiàn yóu cuàn. Tāmen yǔ qì chē zhēng tú, záo chéng xiǎn xiàng huán shēng, quē yē wèi niàng chéng chē huó. (Chèng: 76)

In America, bikes are used for exercise only. Here, they have the function of private cars, carrying both people and goods. Those whose riding skills are advanced weave in and out among pedestrians and cars, as if they were performing acrobatics. They take the same routes as cars, always creating dangerous scenes, but (contrary to what one would expect) this doesn’t result in any accidents.

In 23 the speaker asserts that American teenagers will behave after they grow up. The expectation about American teenagers in this particular context is, however, more than that: after they grow up, American young people are expected to accomplish more than just behaving themselves. Thus, the (asserted) reality does not measure up with the expectation. However, taken from another perspective, the (asserted) reality and the expectation share one feature regarding American teenagers, i.e., they are at least not unruly when they grow up. What the speaker intends here is twofold: on the one hand, he acknowledges the discrepancy between the reality and the expectation; on the other hand, he concedes the similarity between the two. Yē marks this similarity, meanwhile casts a downturning effect on the asserted proposition to signal the discrepancy.

24 illustrates a similar juxtaposition between the asserted reality and the situation idealized in people’s minds. The husband in this episode was the only person who went to the cemetery, and he was responsible for choosing a
plot for burying his dead mother. He did this by consulting with the people who ran the cemetery because he didn’t know how to do it by himself. Now after he has returned, he is obliged to explain how the plot was chosen but can’t offer an illuminating answer. This, of course, does not measure up with what was expected of him. By using downtoning yē in the utterance that asserts the reality, the speaker not only acknowledges the discrepancy between the not-so-satisfactory reality (i.e., The husband didn’t know much about what was going on) and the idealized expectation (i.e., He would make a sober decision and find a good plot), but also concedes the similarity between the two (i.e., The plot is chosen anyway).

In 25, what was expected under the circumstances is that the competition between bikes and cars would lead to accidents. The asserted reality (i.e., No accident happened) does not ‘measure up’ with this expectation. However, no matter whether accidents happen or not, it is dangerous all the same. Again, downtoning yē is used to highlight the discrepancy between the asserted and the expected. However, the dangerousness embedded in both cases is acknowledged as their shared feature.

E. DOWNTONING AND UNIVERSALITY

Given the downtoning function yē has over the (asserted) proposition, it will be much easier to go back to the question we left behind in section C.2. We wondered why yē goes more with negative universality than with affirmative/positive universality. The examples are from 13 to 22.

The downtoning tendency of yē may be the explanation. Universal negation goes hand in hand with downtoning because the latter focuses on the low/negative end of a scale. On the other hand, universal affirmation occupies the highest (positive) end of a scale, and consequently contrasts with downtoning. This is why many universal affirmations cannot co-occur with yē (cf. 20b, 21b, and 22b).

For those universal affirmations where yē can be used, such as in 14b, 16b, 17b, and 19b, the downtoning effect operates in the same way as it does in the evaluative use in 23 to 25. Yē reduces the face value of the whole proposition by adding a downtoning effect to it. It highlights the speaker’s reserved attitude toward the ‘real’ situation that (s)he is describing: it could be plain truth, which is not worth repeating, or, it is less ‘satisfactory’ than what was expected of it. For example, 14b concerns a fact which the speaker believes that everybody knows, and thus should not have bothered to repeat.
17b. has the connotation that the speaker disapproves of the reality that Coco-Cola ads are seen everywhere in America.

F. SUMMARY OF ANALYSIS

The three types of uses of ve are discussed above. In each use, ve has the function of pointing to the similarity between the values under juxtaposition. The first type is a straightforward symmetric juxtaposition of two or more values. The second type of ve is a scalar particle, bringing the designated extreme, atypical, or unexpected value into the group of more typical, normative, or expected values by pointing to their shared property, which is designated by the main predicate. The scalar ve also occurs with universal negation, illustrating a tendency of asymmetric inclusion toward the negative, lower end of a scale. The downtoning effect is most explicit in the third use of ve. It discounts the face value of the proposition in the uttered sentence by implicitly contrasting it (i.e., what is being asserted) with the never-to-be-measured-up expectation or norm established in the discourse. Finally, some scalar ve cases are also found to be the evaluative downtoning ve.

From the first type to the third type, juxtapositions shift between parallel, symmetric ones and asymmetric, negative-end oriented ones. At the same time, the range of ve’s operation shifts from the propositional content to the epistemic world, and finally to the speech-act situation. This shift of the planes on which ve applies its semantics forms a gradual transition from a focus on ‘what is said’ to a focus on ‘how it is said’, with an increasing involvement of the speaker’s judgment and evaluation. As it highlights similarity among juxtaposed entities, ve in all three uses furnishes cohesiveness in building up the text/conversation. However, it is in implicitly bringing into play contextual norms and expectations and the speaker’s evaluation of the described situation, that ve contributes to the coherence in discourse [cf. notions of cohesion and coherence in Halliday & Hasan (1976) and Tannen (1984)].

G. ABSTRACTION OR POLYSEMY?

Now that we have examined the various uses of ve and pointed out the semantic connections among them, the next question is, what is the best way to characterize these semantic connections?

If we take the abstraction approach, it is actually not difficult to identify the core meaning that underlies all three types of use. It is even possible to
capture it in semi-logical notations, as attempted in 26. The case described in 25. is used here to exemplify the variables involved therein.

26. \( y \equiv v(s) \leq > v(s) \& \exists t \neq s, v(t) \) \( s, t \in S \)
\( S = \{s, t, \ldots\} \)
\( S_r: \) set of juxtaposed entities
\( S_r^c: \) set of entities not juxtaposed to one another
\( v = \) property/properties ('Competitions between bikes and cars are dangerous')
\( s = \) (The asserted reality, 'No accident happens')
\( t = \) (The expectation under the circumstances, 'Accidents will take place')

The notation can be read as follows: 'When \( y \equiv \) is used in an utterance to accompany an entity \( s \) that possesses a property \( v \), this utterance amounts to mean that both the entity \( s \) and all the entities \( t \) that are in juxtaposition with \( s \) share the property \( v \).' The identity of entities such as \( s \) and \( t \) varies from NPs designating objects or ideas, to sentences designating propositions, and to unsaid expectations pragmatically arising from the discourse context. When \( s \) and \( t \) are semantic constituents smaller than a proposition (e.g., subject NPs), the property \( v \) is usually another semantic constituent forming the propositional content (e.g., predicate VPs). When \( s \) and \( t \) are propositions, the corresponding \( v \) is also a proposition, representing the shared feature(s) in \( s \) and \( t \) at that particular discourse context. (This latter case is exemplified in 26.)

This formal approximation presented in 26. is fashioned in accordance with an equivalent approximation for \( y \equiv \), as it is attempted in Biaq (1988). It is repeated here in 27.

27. \( y \equiv v(s) \leq > v(s) \& \exists w \neq v, w(s) \) \( v, w \in V \)
\( V = \{v, w, \ldots\} \)
\( V_r: \) set of relevant properties
\( V_r^c: \) set of irrelevant properties
\( s = \) CONVERSATIONAL TOPIC

\( y \equiv \) and \( y \equiv \) are often paired together because they have identical syntactic behavior, similar meanings, and parallel operations on the three discourse planes. However, their semantic difference becomes apparent when 26. and 27. are contrasted with each other. As pointed out in Biaq (1988), \( y \equiv \) signals the 'accumulation of relevant properties for the same entity (i.e., conversational topic),' or for short, the 'accumulation of relevance.' It should be obvious now that \( y \equiv \) marks the 'same property/properties shared by
juxtaposed entities', or for short, the 'similarity in juxtaposition'. In other words, yòu draws attention to the different (but relevant) properties in one entity, whereas yē highlights the similarity in different (but juxtaposed) entities.

Although the abstractionist approach captures the core meanings of yē and yòu, and as a consequence seems to be able to summarize the semantic difference between the two lexical items neatly, it fails to address the issue of how the semantic connections among the diverse uses in each case have come to being (cf. Fox (1986) for discussion on the same issue with respect to discourse anaphora). Sweetser (1986) argues for a dual adoption of the abstractionist approach and the polysemous approach in dealing with lexical semantics. As she points out, while negation and conjunctions are good candidates for an abstractionist analysis, in which the differences among diverse uses can be accounted for by independent pragmatic principles, the semantic behaviors of prepositions and modals are probably best treated in a polysemous analysis, in which one of the uses of a lexical item is considered the basic meaning, and other uses are metaphoric extensions from it.

Yē and yòu, and other Chinese adverbs of similar behavior such as cāi, jiū, and dōu, probably fall in the latter group, demanding a polysemous approach for more illuminating analyses. First, although there is a regularity in the triple application of these Chinese logic-oriented adverbs on the three discourse planes, it does not seem to be a 'universal' regularity across languages. The closest English equivalents of these adverbs are probably 'also,' 'again', 'even', 'only', 'just,' and 'all.' While they all operate on the propositional plane and the epistemic/hypothetical plane, not all of these English lexical items have developed a third use on the speech-act plane. Since the triple application is not universal, the diverse uses (especially the one on the speech-act plane) of these Chinese words are contingent rather than automatic or inevitable (given the pragmatic principles). In other words, even when pragmatic parameters are set, these diverse uses are not necessarily predictable derivations from the core meaning. Thus, the connections among these diverse uses are probably best characterized as semantic extensions motivated by the relatedness derived from metaphoric schema or cognitive prototypes.

Beyond universality/predictability, the directionality of the development of the diverse uses, both acquisitionally and historically, may constitute another argument for abandoning the abstractionist analysis. Lobov's studies of urban English dialects spoken in American cities (1972, 1984) have shown that the expressive uses of grammatical words are acquired by young speakers much later than the cognitive uses of the same words. Meanwhile, from the
perspective of historical semantic changes, Traugott (1982, 1986) has hypothesized a process which she calls 'subjectification': 'Over time, meanings tend to come to refer less to objective situations and more to subjective ones (including speaker point of view), less to the described situation and more to the discourse situation' (Traugott 1986: 540).

Thus, in addition to cross-language comparisons, investigations on the semantic development of ye and the other Chinese adverbs of similar behavior from perspectives of language acquisition, historical change, and conversation analysis may ultimately provide critical support for the polysemous analysis as an alternative, or even as the better approach.

Notes

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The Interplay of Syntax, Semantics, and Pragmatics in Mandarin Chinese

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1. Introduction

This presentation is a synthesis of works done by my students and myself in the area of Mandarin syntax, semantics, and pragmatics (including discourse analysis) during the past few years. The topics range from the selection of participant anaphora to the functions of the particle LE (as both the verbal suffix -le and the sentence-final particle le) and the nature of the durative marker -zhe. As some of the research findings have been circulated through conference presentations or manuscript exchanges, my purpose here is not so much to present the results of those research projects as to demonstrate how different components of linguistic study must be integrated in order to conduct a full investigation of even one seemingly isolated aspect of the linguistic system. But in order to do so, the research findings must at least be presented in outline form.

In the following sections, I will briefly outline three works in their chronological order. Then I will try to relate them to each other in a network where the choice of one form in one aspect of the grammar will affect the choice or interpretation of some of the other forms in another aspect of the same grammar.

2. Outlines of Research

The three works to be introduced in outline form in this section are: Li (1985) on participant anaphora, Chang (1986) on the particle LE, and Chu (1987) on the nature of the durative aspect marker -zhe.

2.1. Li (1985) on participant anaphora

Basing her analysis on genuine written narrative discourse samples, Li treats participant anaphora in terms of appropriate choice among three
forms: lexical NP, pronominal, and zero-anaphor (hereinafter 0). She approached the problem at three levels: syntax, semantics, and discourse.

At the syntactic level, there is only one constraint which says that no 0 may occur as a participant anaphor which functions as the object of coverb or as pivotal object. Observe:

(1) 我母亲对他/我的朋友/*0很好。  
Wǒ mǔqin duì tā/wǒ de pěngyǒu/*0 hěnhǎo  
My mother to his/my friend/*0 very good  
'My mother is very kind to him/my friend/*0.'

(2) 我请他/张先生/*0买了一张票。  
wǒ qǐng tā/Zhāng Xiānshēng/*0 mǎi yīzhāng piào  
I asked him/Zheng Mr./*0 buy LE one-M ticket  
'I asked him/Mr. Zhang/*0 to buy me a ticket.'

In (1), tā/wǒde pěngyǒu/*0 serves as the object of the coverb duī; in (2), tā/Zhāng Xiānshēng/*0 serve as the object of qǐng and, at the same time, the subject of mǎi. The zero-anaphor is rejected in both positions. The selection between a lexical NP (such as wǒde pěngyǒu and Zhāng Xiānshēng) and pronominal (such as tā), however, is not constrained by syntax.

At the semantic level, the lexical NP has the full freedom to occur, whether it is human or non-human, definite or indefinite. This is only natural because any entity must be able to be referred to by a lexical NP. A pronominal, however, can generally be used to refer only to entities which are both human and definite. Observe:

(3) a. 我昨天买了一张画, 0/?它很好看。  
Wǒ zuótiān mǎi yīzhānhuà, 0/? tā hěnhǎokàn  
I yesterday buy LE one-M painting, 0/? it very good-looking  
'I bought a painting yesterday; it was very beautiful.'

   b. 我昨天认识了一位小姐, 0/她很漂亮。  
Wǒ zuótiān rènshì yīwèi xiǎojiě, 0/tā hěn piàoliàng  
I yesterday meet -LE one-M young-lady, 0/she very pretty  
'I met a young lady yesterday; she was very pretty.'

(4) a. 我要找人帮忙。  
Wǒ yào zhǎorén bāngmáng  
I want look-for person help  
'I'd like to find somebody to help (me).'
b. 我要找张先生帮忙。
Wǒ yào zhǎo Zhāng xiānshēng tā bāngmáng
I want look-for Zhang Mr. /he help
'I'd like to ask Mr. Zhang/him to help (me).'

In (3a), tā referring to an inanimate painting is not as acceptable as 0; while in (3b), both tā and 0, referring to an animate entity, are equally acceptable. In (4a), rèn refers to a non-referential indefinite person. Replacing it with a pronominal tā or tāmen would change the meaning to both referential and definite. Since Zhānq Xiānshēng in (4b) is definite, it may be replaced by tā without changing the semantic content. Yet the difference between the two forms is not a matter of semantics, but one of the discourse.

The occurrence of zero-anaphors is, on the other hand, partially controlled by semantic factors. A zero-anaphor can refer to entities that are either definite or generic (i.e. non-referential indefinite). In other words, only referential indefinite entities cannot be referred to by a zero-anaphor. Observe the following examples:

(5) a. 你看到老张没有？
Nǐ kàndào Lǎo Zhāng méiyǒu?
you see Old Zhang not-you
'Did you see Old Zhang?'

b. 没看到他/0。
Méi kàndào tā/0.(definite)
didn't see him
'No, I didn't.'

(6) a. 你在找什么？
Nǐ zài zhǎo shénme
you ZAI look-for what
'What are you looking for?'

b. 找一支铅笔。
Zhāo yīzhī qiānbǐ.
look-for one-M pencil
'I'm looking for a pencil.'

(7) a. 书在哪？
Shū zài nǎ?
book at where
'Where's the book?'
b. 我在找0。
Wǒ zài zhǎo 0. (definite)
I ZAI look-for
'I'm looking for it.'

(8) a. 她是医生，她先生也是医生。/0。
Tā shì yīshēng, tā xiānshēng yě shì yīshēng/0. (generic)
she be doctor, her husband also be doctor/0
'She's a doctor, so is her husband.'

b. 0不经一事，0不长一智。
0 Bú jīng yīshì, 0 bú zhǎng yīzhì. (generic)
0 not through one-happening, 0 not increase one wisdom
'Wisdom grows only with experience.'

b. 0少说话，0多做事。
0 Shǎo shuōhuà, 0 duō zuòshì. (generic)
0 lite talk, 0 more work
'Talk less and work more.'

In stead of tā, a 0 is permissible in (5b) just because its reference is definite. Similarly, the 0 in (7b) is permissible for the same reason. The zero-anaphors in (8) are used because their references are all generic. The choice between 0 and a pronoun [as in (5b)] or between 0 and a lexical NP [as in (8a)], however, depends on discourse organization rather than syntax or semantics. The only case where a zero anaphor is not permissible is (6b), where yīzhì qiān bǐ is indefinite.

Li's most valuable contribution to the better understanding of participant anaphora in Mandarin is made at the level of discourse. According to her, Mandarin discourse is organized in a hierarchical structure of three tiers: clause, topic-chain, and paragraph. Correspondingly, while no anaphora is needed within the domain of a simple clause (perhaps, except for zījī 'self'), 'zero-anaphora serves as an internal cohesive tie between clauses that form a topic chain' and 'pronouns are used to mark the beginning of a new topic chain'. (Li, 1985: 144-5). Lexical NPs are used to introduce a new topic (or reintroduce an old topic), which is one of the characteristics of the beginning of a paragraph.

To illustrate the relationship between discourse structure and anaphora, we give the following passages:
(9) a. 李大林今年十七岁，
   Li Dālin jīnnián shíqì suì,
   'Li Dālin is seventeen this year,'
   b. (0%) 高雄市人，
      Gāoxióngshì rén
      'He is a native of Gaoxiong City,'
   c. (5%) 现就读富华中学高中二年级，
      xiàn jiùdú Fūhuá zhōngxué gāozhōng èr niánjì.
      now study Fuhua senior-high 2nd-year class
      'He is now studying in the second year of Fuhua High School,'
   d. (75%) 从八岁起就喜欢游泳，
      cóng bāsuì qǐ jiǔ xīhuān yóuyǒng,
      from 8 year-of-age start like swimming
      'He has loved swimming since (he was) eight years old,'
   e. (0%) 天天吵着服务于台塑公司的父亲带着他到游泳池泡水。
      tiāntiān chǎozhe fúwùyú Táisù Gōngsī de fùzhěn
      everyday annoy-ZHE serve at Taisu Co DE father
dài zì hē tā (95%) dào yóuyǒngchí páoshuǐ,
      take-ZHE he to swimming pool immerse water
      'Everyday, (he) begged his father, who served at Taiwan Plastic
cóu shì de fùzhěn, to take him to the swimming pool to immerse (himself) in
Co., to take him to the swimming pool to immerse (himself) in
水，
   f. (10%) 从此就与水结下了不解之缘。
      cóng cí jiù yú shuǐ jié xiàle bù jiě zhī yuán
      'From then on, (he) has established an inseparable relation with
   water.'

(10) a. 从前有一个姓李的，
   Cóngqián yǒu yīge xìng Lǐ de,
   formerly there-be one-M surname Li DE
   'Once upon a time, there was a person surnamed Li,'
   b. 0 养了一个八哥，
      0 yángle yīge bāgé,
      0 keep-LE one-M myna-bird
      '(He) owned a myna bird,'
   c. 0 天天给它吃肉，
      0 tiāntiān gěi tā chī ròu
      0 everyday give it meat eat
      '(He) fed him meat everyday,'
d. 天天教它说话，
0 tiān tiān jiāo tā shuōhuà,
0 everyday teach it talk
'(He) taught him to talk everyday,

e. 这个八哥非常聪明，
Zhègè bāgè fēicháng cóngmíng,
this-M myna-bird unusually intelligent,
'This myna bird was unusually intelligent,

f. 一教 0，0 就会。
yījiāo 0，0 jiù huì,
one-teach 0，0 then know-how-to
'As soon as it was taught, it would learn,

g. 有时候0还会跟李先生说话。
yǒushíhou 0 hǎi hui gèn Lǐ xiǎnshēng shuōhuà.
sometimes. 0 even would with Li Mr. talk
'Sometimes, it would even talk with Mr. Li.'

The text in (9) was used in a questionnaire administered to twenty native speakers. The figure in each pair of parentheses is the percentage of the native speakers that indicated a pronoun is needed in that position. Aside from the second figure in (9e), where a non-zero is expected because it occupies a pivotal object position (and this is the only place the author uses tā, as is indicated by its presence in the text), the only significantly high percentage is found in (9d). This happens to the clause where a past story starts after an introduction of the present status of Lǐ Dálín. Thus, (9a)-(9c) form one topic chain and (9d)-(9f) form another. In (10), after the two participants, xíng Lì de and bāgèr, are respectively introduced in (a) and (b), only 0 is used for xíng Lì de in (b)-(d) in the topic position, apparently because this participant has been introduced to be the topic by the presentative yǒu-clause. However, when this discourse shifts to the other participant—i.e., taking it as the topic—the lexical NP bāgèr is used to reintroduce it as a new topic in (10e).

What these two discourse samples illustrate is that 0 is employed as an internal tie to maintain topic chain unity and that a lexical NP is used to (re-)introduce a topic. A pronoun serves to mark the beginning of a topic chain that maintain the same topic as the preceding one.

There are, of course, other relatively minor factors that affect the choice of one anaphoric from over another. Some such factors are: (a) the speaker's assessment of ease or difficulty for the addressee to decipher reference, (b) his particular way of organizing the discourse—i.e., the length of a topic chain
or paragraph, and (c) his differing degrees of empathy with the participants in the story. They thus contribute to individual variations in anaphoric choice. Though such variations can be considered stylistic differences, they do not in any way invalidate the basic principles set forth in Li’s thesis.

2.2 Chang (1986) on the Particle LE

Chang’s study is also based on genuine data of narrative discourse. A total of eighty native speakers of Mandarin were asked to choose between LE and 0 in eight test samples. The statistic figures are therefore quite representative. In his treatment of LE, Chang follows the tradition of distinguishing between the verbal suffix -le and the sentence-final particle le. From that point on, however, he departs from tradition and analyzes the functions of the particle le at the level of (propositional) semantics on the one hand and at the level of discourse on the other. Semantically, le marks change of state, but pragmatically, it serves to indicate the end of a discourse unit—a topic chain, a paragraph, or an even longer unit. Those two functions, however, may act upon each other to produce mixed results.

The verbal suffix -le is regarded as a perfective aspect marker insofar as it serves to denote ‘realis.’ At the semantic level, it is compatible with an action verb, but it is incompatible with a state verb. At the discourse level, it may be used to indicate anteriority (i.e., logical or temporal precedence), even with state verb such as you ‘to have.’ More significantly, it may be suppressed to achieve cohesion within a unit—i.e., le is only attached to the last (known as ‘peak’) of a series of action verbs that are lexically cohesive. Morphologically, however, the perfective aspect le of a monosyllabic action verb can NOT be suppressed under any condition.

The general principles stated above can, in some way, be modified by other factors. For the sentence-final le, for example, the presence of connectives and constructions involving semantic parallelism, and the ‘classical’ flavor of the clause itself may disfavor the use of le. For the verbal suffix -le, the perception of the verb-object construction as a meaning unit, a verb of ‘saying’ followed by a quote, etc. may preempt its use.

In the following, examples are given to illustrate the general principles that govern the use of LE in Mandarin narrative discourse.
(11a). 在竞选活动未开始前，
Zài jìnxuǎn huódòng kāishǐ qián,
'Before the election campaign begins,
\'Before the election campaign not begin before
at election campaign not begin before
b. 形形色色的选举现象已经出现在市面上，
xíngxíngsè sè de xuǎnjú xiǎnxiàng yǐjīng chūxiǎn zài
a-great-variety DE election phenomenon already appear at
shímiàn shàng
\'various activities of election have already appeared before (the
eyes of) the public,
\'various activities of election have already appeared before (the
eyes of) the public,
c. 相信在竞选活动开始后，
xiāngxin zài jìnxuǎn huódòng kāishǐ hòu,
believe at election campaign begin after
\'It is believed that after the election campaign actually starts,
d. 将有表面化的精彩花招。
jiāng yǒu biàomiǎnhuà de jǐngcái huázhāo, 00/00
will have more surface-ize DE exciting trick
\'there will be more campaign tricks emerging.'
e. 这代表了民主政治的一面。
zhè dàibiǎo -le mínzhǔ de yìmiàn.
this represents LE democracy DE one-facet
\'This represents one facet of democracy.'
f. 还有两天，
huáiyǒu liǎng tiān, 42/12
still have two day
\'There are two more days (left),
g. 大家可以待目以待了。
dàjiā kěyǐ shídú yí dídão, 08/12
everyday can wipe-eye-in-expectation LE
\'we can keep our eyes wide open (to see it happen).'

The discourse passage in (11) was a news-dispatch in a newspaper and was submitted to 26 native speakers for their judgment about the necessity of le in the blanks. The first figure in each blank represents the percentage of the speakers who indicate an obligatory use of le in that position. The second figure represents an optional use. In the original version, le occurs only in (11g), which is indicated by the presence of the particle in the blank. As the figure show, the test subjects are unanimous on the non-use of le in (11d) and they generally agree on the need for le in (11b). In (11f), about half of the respondents choose to have either an obligatory or an optional le. Finally, only 20% of the respondents agree with the author's use of le in (11g), and of
course none of them were shown the le there in the blank. Chang’s (1986: 127-9) explanation goes as follows: Of the four possible change-of-state positions, (11b) most strongly calls for a le because that’s where the first topical unit ends. Sentence (11f) marks the end of factual change-of-state, contrasted with a following piece of advice from the author. None of the respondents choose le in (11d) just because it’s a prediction/expectation by the author. The discrepancy between the author and the respondents with regard to (11g) is viewed as different perceptions: the author knows that it is the end of the entire news-draft, while the correspondents are aware the passage is given as an excerpt and therefore are not sure.

We see here that the two functions of the sentence-final particle le indeed act upon each other to produce mixed results.

The following passages show the discourse function of the verbal suffix -le, whose semantic function as perfective aspect marker to indicate ‘realis’ is here assumed.

(12)a. 华老栓忽然坐起身，
Hua Lao Shuan suddenly sit-up body
‘Hua Lao Shuan suddenly sat up,

b. 擦着火柴，
czáhe huóchái,
‘struck a match,

(c. 点上遍身油腻的灯盏
diǎnshàng biànshēng yǒuníe dēngzhǎn,
light-up whole-body grease-DE lamp
‘lit the completely grease-covered lamp, (and)

d. 茶馆的两间屋子里便弥漫了清白的光。
cháguǎnzuì liǎngjiān wǔzǐli biān mǐmánli qīngbái de guāng
tea-house-DE two-M room-inside thus fill-LE greenish light
‘the two rooms of the tea-house thus were filled with greenish white light.’

(13)a. 当我侥幸考上北市一所市立高中，
Dāng wǒ jiàoxìng kǎoshàng yīsuǒ
when I luckly admit-LE Taipei-city one-M
shílì gāozhōng,
municipal high-school
‘When I was luckily admitted into a municipal of Taipei,
b. 家里然放了一串鞭炮，
    jiālǐ ránfāng le yī chuan biānpào
  home-LOC set-off-LE one-M fire-crackers
    'my folks set off a string of firecrackers, (and)

c. 足足高兴了好几天。
    zúzú gāoxíng le hǎo jītiān
thoroughly happy-LE several day
    'were thoroughly immersed in happiness for several days.'

(14)a. 手里有了钱，走在路上，也扎实多了。
    Shǒuli yǒu qian, zǒuzài lù shàng,
  hand-inside have-LE money walk at road-LOC
    yě zǎoshì duō le
  also secure much LE
    'Having money in (my) hand, (I) felt a lot more secure walking on the street.'

b. 你三叔已经到了桂林，我要把你送到桂林去。
    Nǐ sānshù yǐjīng dào le Guīlín, wǒ yào bā nǐ sòng dào Guīlín qù.
you 3rd-uncle arrive-LE Guilin I want BA you you send to Guilin go
    'Your 3rd uncle has arrived in Guilin and I want to send you there.'

The narrative in (12) shows that even though there are four events, they can be regarded as sub-events of a single one and thus the verbal suffix -le is used only with the last action verb to highlight the 'peak' of the series of sub-events that make up one bigger event. In a sense, this discourse function of -le corresponds to that of 'and' in English, which is inserted in the parentheses in the translation. The narrative in (13), on the other hand, illustrates the anteriority function of -le in clauses (a) and (b). That is, the three events in (13) are separate, yet they are related and happen one after another in that particular order. The -le in (c) is, of course, the peak marker of the series of events. Finally, in (14), the italicized -le's are used to accommodate monosyllabic verbs in both of the two short discourse texts.

Chang (1986), however, doesn't stop at investigating the verbal suffix -le and the sentence-final particle le separately. He goes into the interplay of them. By and large, the presence of the verbal suffix may sometimes serve to withhold the use of the sentence-final particle.

2.3 Chu (1987) on the Durative Aspect Marker -Zhe

Basically Chu confirms the claim that suffix -zhe should be semantically analyzed as a durative aspect marker and syntactically treated as a
The following examples illustrate how different types of verbs may interact with the durative aspect expressed by -zhe.

(15a) 他嚼着口香糖说话。
Tā jiāozhe kǒuxiāngtáng shuōhuà.
'He talks/talked while chewing gum.'
(Chen, 1986:5)

b. 他们在门口站着。
Tāmén zài ménkǒu zhànzhe.
'They are standing at the door.'
(Ma, 1985:27)

c. 杂志我在书架上放着。
Zázhì wǒ zài shūjiāshàng fāngzhe.
'I put the magazine(s) on the bookcase.'

d. 我身体很好。
Wǒ shēntǐ hěnhǎo.
'I am very healthy.'

e. 跟(着)我来。
Gēn (-zhe) wǒ lái.
'Follow with(-zhe) I come
'Follow me/Come with me.'

Jiāo in (15a) is an action verb. The suffix -zhe explicitly indicates that the duration of the action is relevant in this sentence. Zhān in (15b) is a posture verb, which has two interpretations: an active action or its result. The use of -zhe highlights the result and the durative nature of the result. Fāng in (15c) is a placement verb and shares the same characteristics that a posture verb has. Hǎo in (15d) is a stative verb. By nature, a state is durative and therefore a durative aspect marker is at best unnecessary. Gēn in (15e) can be either a verb meaning 'to follow' or a preposition (or co-verb) meaning 'with.' When it is interpreted as a verb, -zhe may serve as a durative marker. Otherwise,
gēn is interpreted either as a preposition or as a verb with a zero aspect
marking.7

The syntactic function of subordination expressed by -zhe can be viewed
from two different perspectives: in the complex sentence and in the simple
sentence. Subordination by -zhe in the complex sentence is a relatively easy
problem to address and can be illustrated by (15a, d and e), repeated below as
(16a-c).

(16a. 他嚼着口香糖说话。
Tā jiǎozhe kǒuxiāngtáng shuōhuà.
'He talks/talked while chewing gum.'

b. 我身体很好。
Wǒ shēntǐ hěnhǎo (?-zhe).
'I am very healthy.'

c. 跟(着)我来。
Gēn (-zhe) wǒ lái.
'Follow me/Come with me.'

In (16a), jiǎozhe kǒuxiāngtáng is obviously a construction subordinated to the
main verb shuōhuà. In (16b), apart from hǎo being a stative verb and thus
need no durative marker to highlight its durative nature, the
subordinating function of -zhe also helps to make the utterance less
acceptable as independent sentence--i.e. the best one can say about it is
that the utterance is incomplete since it is only a subordinate structure. In
(16c), since there is the main verb lái, the utterance is complete whether or not
gēn is marker with the subordinating suffix -zhe.

The so-called simple sentence with -zhe is a thornier problem. It is
illustrated below in (17).

(17a. 等着!
Děngzhe!
wait-ZHE
'Wait!'

b. 他打着电话呢。
Tā dǎzhé diànhuà ne.
'He is talking on the phone.'

Děngzhe! Zuòzhe! Názhé!
wait-ZHE sit-ZHE take-ZHE
'Sit down/Be seated!' 'Hold (on to it)!'
c. 汤热着呢。
   Tāng rèzhē ne.
   soup hot/heat-ZHE NE
   'The soup is awfully hot/being heated.'

If the syntactic function of -zhe is subordination, all the utterances given in (17) should be incomplete. Indeed, they ARE incomplete. Those in (17a) all have some overtone: something else would (not) happen if you do this. The fact that (17b) and (17c) need a final ne, with its capacity to signal a topic, here says that this utterance is meaningful only in relation to whatever follows, explicitly said or implicitly understood. Further examples may clarify this point.

(18)a. 我在吃饭。
   Wǒ zài chīfàn.
   'I PROG eat meal'
   b. 我(在)吃着饭呢。
   Wǒ (zài) chīzhē fàn ne.
   'I (PROG) eat-ZHE meal NE'
   c. 我(在)吃着饭。
   Wǒ (zài) chīzhē fàn.
   'I (PROG) eat-ZHE meal

To the question 'What are you doing?' over the telephone, (18a) is a plain response; (18b) is an answer with the overtone 'What about?' 'What are you asking?' etc.; (18c) simply sounds unfinished.

The next questions to ask are: Under what circumstances can or should a verb (more exactly, a predicate) be subordinated to another? Why are some subordinate structures with -zhe, (such as (16b)), not as acceptable as others, such as those in (17), even though none of them has another predicate. This leads us to the pragmatic function of the suffix -zhe.

Pragmatically, -zhe serves to indicate that the verb (or the predicate) associated with it is of less weight than any other in the same utterance. Thus,

(19)a. 她跳着舞唱歌。
   Tā tiàozhe wǔ chānggē.
   she dance-ZHE dance sing-song
   'She sings/sang while dancing.'
b. 她唱着歌跳舞。
   Tā chāngzhe gē tiàowǔ.
   She singsZHEsong dance-dance
   'She dances/danced while singing.'

The utterance in (19a) is more appropriate for describing a singer or a singing routine while (19b) is more appropriate for describing a dancer or a dancing routine.

To the other question why some simple-predicate utterances with -zhe are more acceptable than others, Chu (1987) offers the following answer. All simple-predicate utterances with -zhe are equally incomplete in terms of syntax. Pragmatically, however, an appropriate context may fill up where syntax has left incomplete. Those in (17) are good examples, as opposed to (16b), for which an appropriate context is hard to deduce from the utterance itself. Even so, it is not entirely impossible to fit it in a situation, especially when a final ne is added to it. Thus observe the following, which is (16b) plus something else.

(20) 谁说我快病死了？我身体(很)好着呢。
    Shéi shuō wǒ kuài bìng sǐ le? Wǒ shēn tǐ hǎozhe ne.
    who say I soon sick die LE I body (very) good -ZHE NE
    'Who says that I'm (so) sick (that I'm) dying? I'm awfully healthy.'

The question in (20) provides a context that makes (16b) meaningful with the addition of ne.

The example in (20), however, brings up another problem—i.e., the use of -zhe with ne as 'a special intensive form of adjective and other verbs admitting degree' (Chao, 1968:248; also see Li and Thompson, 1981:222). Chu (1987) explains that the intensifying force actually comes from three sources: (i) the use of the subordinating suffix to signal the unfinished nature of the utterance, (ii) the employment of ne to indicate the topical relationship of the statement to its unmentioned comment, and (iii) the addition of the durative marker to a stative verb, which is intrinsically durative. On the basis of Grice's Cooperative Principle (1975 and 1978) and Leech's 'hinting strategy' (1983:97-100), Chu interprets the -zhe with a stative verb as meaning that 'the sustained state of the verb is particularly salient.' This meaning, coupled with the suspense of the sentence being unfinished and the unmentioned comment of 'you-know-what-it-is,' gives the special intensifying force of the construction 'Vstate-zhe ne.'
3. The Integration of Syntax, Semantics and Pragmatics

Toward the end of section 2.3, I demonstrated through Chu (1987) how otherwise separate components of linguistics, i.e., syntax, semantics, and pragmatics, can be combined to interpret the function of one particular construction “Vstate -zhe ne.” In this section, I will try to integrate the three works outlined in Section 2 and interpret the structure of a longer discourse passage and the functions of participant anaphora, LE and -zhe therein as they may act upon each other.

In the following is a passage used by Chang (1986) for the study of LE. We will examine it in light of what the three studies outlined above discovered in terms of the interactions of syntax, semantics and pragmatics.

(21)a. 一阵，早有一个战士，01*(他1) 卷起_1_袖子，
yipáng, zǎo yǒu yīge zhànshì, 01*(tā1) juǎnqí_1_ xiúzǐ,
one side early have one-M soldier roll-up sleeves
b. 从老班长身旁拾起_2_锯，
cóng làobānzhāng shěngpáng shíqì_2_jù,
c. 03/(?他3)闭住_3_一口大气。
o3/(?tā3) bìzhù_3_yīkǒu dàqì
d. 像老班长那样，04/(??他4)顺着火炉，05/(??他5)嗖嗖嗖又爬上了烈火飞腾的木排架，
xuāng làobānzhāng nàyàng, 04/(??tā4), shùnzhe huólú,like old squad commender that manner go along-ZHE firepath
05/(??tā5)sōu sōu sōu yǒu pānshāng léhuò féitēng de
whizz-whizz again climb-up-LE fierce-fire fly-gallop De
mùpáijiā
wood scaffold
e. 不一会儿那战士 (他6) 向桥下大喊_4_‘跑开!’
bùyīhuìr nà zhānshì/(tā6)xiàng qiáoxià dàhān_4_
in no time that soldier toward bridge-underneath loud yell:
‘pǎokāi!’
f. 接着，06/(他7)蹬出_5_右脚，
jíezhē, 06/(tā7) děngchú_5_ yòujiǎo,
subsequently kick-out right-foot
g. 07/(??他们/人们)就听_6_卡巴一声，
07/(??tāmén/rénmén) jiù_6_kābā yǐshēng
then hear thump one-sound
h. 那根火红的立柱，08/*(它8)拖着火舌，09/*(它9)一头栽了下来。

那根火红的立柱，08/*(它8)拖着火舌，09/*(它9)一头栽了下来。

neīgēn huǒhóng de lìzhù, 08/*(它8) tuōzhe huǒshé, 09/*(它9) yītóu zāile xiàlái.

headlong fall-LE down-come

'On one side, there was already a soldier, who rolled up his sleeves and picked the hand-saw from beside the old squad commander. The soldier took a deep breath, and (moving) along the fire lane, as the old squad commander did, he climbed, with the sound 'whizz, whizz', up the wooden scaffold, which was in a raging flame. In no time, the soldier shouted (in warning) to (people) underneath the bridge: "Stay back!"

Subsequently, (he) kicked out with his right foot. Then there was (heard) a "thump" and the flaming-red column, dragging the licking flame, fell headlong to the ground.'

The notations in the presentation of the passage call for some explanation. The numbered blanks indicate positions where a potential LE is possible. The 0's represent slots where zero-anaphora is occurring. Tā, tāmén, and rénmén in parentheses mean that they are syntactically and/or semantically permissible in those positions, though they are not used in the original text. The NPs that are italicized are topical in nature; the other lexical NPs are non-topical. The three occurrence of -zhe are also underlined.

The passage is obviously divided into two 'paragraphs' (or 'segments'): (a)-(b) form the first paragraph and (e)-(h) the second one. The first paragraph is marked by the aspect marker -le attached to the peak event verb pānshāng in (d). The other three action verbs—i.e. juānqì in (a), shīqì in (b), and bīzhù in (c)—are in non-peak positions and thus are not marked by -le. Yet, syntactically and semantically, each of the three verbs could very well occur with -le. The second paragraph is similarly marked: only the peak event verb zài in (h) occurs with -le. Thus, we have disposed of the problem of non-occurrence of -le in positions 1-3 and 4-6, although there is an additional factor that prohibits the occurrence of -le in position 4.11.

In position 7, a change-of-state le could occur, but does not. There are two reasons why the author doesn't use a le here. First, the position, though at the end of passage, isn't exactly the end of the report. Secondly, the occurrence of the verbal suffix -le in the same clause reduces the necessity of this sentence-final le, though adding one doesn't hurt the textuality of the passage.
The break between the first and the second paragraph of the passage is not just marked by the verbal suffix -le toward the end of the first paragraph. It is doubly marked by the lexical NP nèizhānshì at the beginning of the second. This clearly demonstrates a discourse function that a lexical NP performs beyond the introduction of a new participant or the reintroduction of an old participant. On the other hand, the lexical NP nèiqèn huǒhóngde lìzhù in (h) is used exclusively to introduce a new participant. While a third one, yīge zhānshì in (a), is definitely used for the same purpose, it is hard to determine without any preceding text whether or not it also marks the beginning of a new paragraph.

The division between the two groups of clause (a)-(d) and (e)-(h), however, does not have to be made in terms of paragraphs. It can very well be done by using the pronominal anaphor, i.e. tā 6, instead of the lexical NP nèizhānshì. Then there would be two topic chains instead of two paragraphs in Li’s terminology. But they would remain two segments in Hinds’ terminology.10

The zero-anaphors (denoted by 01-09 in the text), which serve to mark internal cohesion within a topic chain, complement very well with the non-use of -le. Replacing them by other forms of anaphora thus may result in different degrees of acceptability. Both 01 and 06 can be equally readily replaced by pronouns without incurring any acceptability problem. This face is indicated by a plain tā following the zero after a slash. The reasons for this ready replaceability, however, are not the same for them. Tā 1 in (a) can replace 01 freely because both 0 and a pronoun may follow a newly introduced participant to establish it as a topic. On the other hand, tā 7 instead of 06 in (f) marks the clause as temporally detached from the event in (e) anyway. Besides, the non-use of -le in position 4 may be interpreted as not due to the verb being in a non-peak position—i.e. dàhán may be interpreted as a peak verb despite its occurring without a -le.11 If so, setting (f) from (e) isn’t as odd as in some other cases.

Some of the other 0s, i.e. 02-05, are not as readily replaceable by a pronoun as are 01 and 06. This fact is indicated by a tā preceded by a question mark. The reason not for a pronoun to occur in those positions is that a zero anaphor is needed to go with the non-peak predicates, i.e. those that are not marked with -le, though semantically and syntactically they could very well be so marked. In other words, zero anaphora and marking of the aspect of an action verb which would otherwise be marked by a -le reinforce each other to function as internal cohesive ties of a topic chain.
The last three zero anaphors, 07,08 and 09, are quite different from the others. None of them can possibly be replaced by a pronominal, though for different reasons; and only 07 can possibly be replaced by a lexical NP rēnmén 'people' or its like. The subject position occupied by 07 requires a generic human NP, which may be realized as either a lexical NP or a zero anaphor, but not as a pronominal. The zero anaphors represented by 08 and 09 both co-refer with nēiqēn huōhōng de lìzhù, which is inanimate. Because of its inanimacy, no pronominal can be used to co-refer with the lexical NP.

Tā 4 is preceded by a double question mark and tā 8 by a double asterisk, simply to show that a tā in these positions are worse than in other comparable positions. This is so because the verb directly following each of these positions has been 'deverbalized' by the durative aspect marker -zhe.

A further note about the passage. Clauses (21e)-(21h), strictly speaking, do not constitute a single topic chain: (g) and (h) do not have the same topic as (e) and (f). The four of them, however, from a discourse unit: (e) and (f) are tied together by the same topic and a zero anaphor while (f), (g) and (h) are tied together by the non-occurrence of the perfective aspect marker with the non-peak predicates in them. Clause (f) serves as the pivot of the two groups. In the sense, the unit is better called a discourse segment than a topic chain.

A good case can be made here about the complex relationship between the discourse functions of participant anaphora and those of the perfective aspect marker -le: while they converge in (21a)-(21b), they diverge in (21e)-(21h).

4. Conclusion

In Section 2, we discussed (i) the syntactic and semantic permissibility of participant anaphora and its discourse functions, (ii) the discourse functions of LE, with the basic understanding that the verbal suffix -le is semantically for perfective aspect with an action verb and that the sentence-final le is semantically for change of state, and (iii) the functions of the verbal suffix -zhe at the three levels of syntax, semantics and pragmatics. In Section 3 we saw the interplay of LE and participant anaphora in a narrative discourse text, where, though, -zhe only plays a minimal role. The minimal involvement of -zhe is somewhat compensated for in Section 2.3, where a more detailed presentation was given.
One point that I must stress here is that most of the analyses presented in this paper, except for those concerning -zhe, are well documented and supported by statistical data collected from native speakers.

At this point, one would naturally wonder what would happen to a text if discourse constraints are violated but syntactic and semantic rules are well observed. The reader may want to experiment with the passage in (21) or similar texts to discover the unpleasant effects. Student papers in a foreign language class are not very revealing because their violations are usually both grammatical and pragmatic. For the benefit of native English speakers who are interested in Mandarin but may not have attained the proficiency at the discourse level, I give the following short passage in English, which lacks some of the necessary cohesive ties for a discourse (from Reader's Digest, Jan. 1986, p. 10):

(22) Woman to neighbor about husband: 'Harold writes children's stories. His stories are good. Children like Harold's stories. Sometimes, I help Harold. I like to help Harold.'

So, do language teachers teach good grammar only? Or good taste as well?

As a part of the conclusion, I will attempt to apply the basic principles discussed above to the correction of student papers in translation and composition. All the data used below are adopted from actual homework assignments done by second and third year students at the University of Florida. Some alterations have been made so that attention may be focused on more crucial points. Nothing, however, has been changed where anaphora and le are involved. No crucial examples are found in the use of -zhe except for one that has to do with a posture verb.

The passage in (23) is a translation done by a third-year student in Chinese. It is divided roughly in clauses, each of which is preceded by a letter:

(23)a. 张小明是个中国学生，
Zhāng Xiǎomíng shì ge Zhōngguó xuéshēng,
Zhang Xiaoming is a Chinese student
'Zhang Xiaoming is a Chinese student.'

b. 他前年到了佛大来学物理了。
tā qiánnián láidào Fúdà lái xué wúlǐ.
he year-before-last arrive-at Uni-of Fla come study physics le
'He came to the University of Florida to study physics two years ago.'

c. 他是个好学生，
Tā shì ge hǎo xuéshēng,
he be M good student
'He is a good student.'

d. 他连周末也用功。
tā lián zhōumò yè yònggōng.
he even weekend also work-hard
'He works hard even on weekend.'

e. 有一天，在餐厅里，我找不到座儿，
Yītiān, zài cāntīng lǐ, wǒ zhǎobùdào zuòr,
there-be one-day at dinning-hall-inside I can't find seat
'One day, in the cafeteria, I couldn't find a table,

f. 看见他一个人坐着，...
0 kānjiàn tā yīgérén zuòzhe,...
saw he one-person sit-ZHE
'(I) saw him sitting by himself, ...'

Firstly, all the instances of the pronoun tā in (23b, c and d) can be left out to achieve cohesion within a topic chain. The tā in (23c), however, is less inappropriate than the other two, because the four clauses in question can be broken up in two smaller topic chains: (a) and (b) form one chain to introduce Zhang Xiǎoming and tell about his background while (c) and (d) form another chain to describe his personality or status. Secondly, the two le's in (b) are not necessary because it is a clause stating his background rather than narrating what happened, even though it is encoded in the form of an event.

The passage in (24) below is an English text handed out to students for translation exercise. It is divided in paragraphs, each of which is preceded by a letter.

(24)a. An old friend came to see me last month.
b. We went to high school together....
c. My friend told me that she was scared to death when she was taking the college entrance exam. Luckily, she passed it and entered college. She was now studying literature and theatre. She also said....

In the following, two translations are given for discussion. The one in (25) is actually a composite of two versions done by different students.
(25a. 上个月一个老朋友来看我。
Shànggè yuè yī gè lǎo péngyǒu lái kàn wǒ.
last month one old friend come see me
b. 我们以前是高中同学，...
Wǒmen yǐqián shì gāozhōng tóngxué,...
we before be high school classmate
c. 我朋友告诉我，她考大学的时候，0怕的要死，幸而她考得上大学，0现在学文学跟戏剧。她又说，...
Wǒ péngyǒu gāosù wǒ, tā kǎo dàxué de shìhòu, 0 pà de
I friend tell me she take-exam college DE time, 0 frighten-DE
yào, xíngēr tā kǎo de shàng dàxué, 0 xiànzài xué
want-die, fortunately, she can-pass college, 0 now study
wénxué gēn xìjù. Tā yòu shuō,...
literature and theatre she further say

(26a. 上个月一个老朋友来了看我(了)。
Shànggè yuè yī gè lǎo péngyǒu lái(le) kàn wǒ(le).
last month one old friend come see me (le).
b. 我们是中学同学，...
Wǒmen shì zhòngxué tóngxué,...
we be high school classmate, ...
c. 我朋友告诉我，她考大学的时候，怕死了，幸而，她考上了大学，0现在学文学跟戏剧。她又说，...
Wǒ péngyǒu gāosù wǒ, tā kǎo dàxué de shìhòu,
I friend tell me she take-exam college DE time,
pà sǐ le, xíngēr tā kǎo shànggè dàxué,
0 frighten death LE, fortunately, she pass-exam college LE,
0 xiànzài xué wénxué gēn xìjù. Tā yòu shuō,...
0 now study literature and theatre she further say

In (26a), the le's are not needed because the clause is a statement of background rather than the narration of an event. The lexical NP wǒ péngyǒu in (c) is better than a pronoun tā because it is the beginning of a new paragraph. In (26c), the third le is not called for because it is not at the end of a unit, being followed by the subevent 'now is studying literature and theatre' as part of 'college life.' This le in particular clashes with the following 0, which says that the preceding and the following clauses from a topic chain in contradiction with the le says: 'This is the end of a discourse unit.' The last tā, however, is justified in that it is used to start a new topic chain stating about something other than the friend's entering college.
The passage in (27) is another English test for translation exercise. It is also grouped by the paragraph.

(27)a. Some time ago, nuclear engineering was very hot. So, many Chinese students studied nuclear engineering. But when they graduated a few years later, they could not find a job.

b. Now there has been some change. Some Chinese do not study engineering any more. They interested in history, economics, etc. But I still wonder....

Several versions of the translation offer interesting data for our discussion. Only the relevant portion are given below in (28) and (29).

(28)a. ...很中国人学了原子工程，可是几年以后，毕业的时候，他们没有工作。
...hěnduō zhōngguórén xuéle yuánzǐ gōngchéng, kěshí jīnían very many Chinese study-LE nuclear-engineering but a few year yǐhòu, biyè de shìhòu, tāmén méiyǒu gōngzuò. later graduate-DE time they not have work

b. 可是现在改变了，有的中国人不学工程了，他们对历史，经济，什么的，有兴趣。可是我还不知道，...
kěshí xiànzǎi gǎibiànle, yǒude zhōngguórén búxué but now chang-LE, some Chinese not study gōngchéng le, tāmén dui lǐshǐ, jīngjì, shènméde, yǒu xìngqū. engineering le they toward history economics etc. have interest 0 kěshí wǒ hái bù zhīdào,... but 1 still not know

(29)a. 几年以前，原子工程很热门，所以很多中国人学0。可是几年以后，毕业的时候，0找不到工作。
jǐnián yǐqián, yuánzǐ gōngchéng hěnrènmén, suōyí hěnduō a-few-year ago nuclear-engineering very hot so very many zhōngguórén xué0. kěshí jǐnián yǐhòu, biyè de shìhòu, Chinese study 0 but a-few-year later graduate DE time 0zhǎo bù dào gōngzuò. 0 can't find work
b. 可是现在有一点儿改变了，有的中国人不学工程，他们对历史，经济，什么的，有兴趣了。可是我还不知道，...

kēshí xiànzài yǒu yìdiǎnr gǎibiànle, yǒude zhōngguórén bùxué but now there-be a little chang-LE, some Chinese not study gōngchéng le, tāmén dui lǐshì, jīngjì, shènméde, yǒu xīngqù le. engineering le they toward history economics etc. have interest LE kēshí wǒ hái bù zhídào,...

but I still not know

As a text, (29) is obviously a better translation than (28) on at least three counts. First, the last 0 in (29a) serves to strengthen the cohesion between graduation and 'can't find a job.' In other words, these two events are treated as if they were portions of a large event. The corresponding tāmén in (28a) does not serve this purpose so well. Secondly, non-use of le after bù xué gōngchéng in (29b) makes bù xué gōngchéng and dui lǐshì, jīngjì, shènméde, yǒu xīngqù sound like they form an integral whole that happen all at once. Thirdly, the use of the last le in (29b) as contrasted with the non-use in (28b), gives a proper sense of the ending of a discourse unit, as the next sentence starts something not related to the same topic.

These examples, I hope, have shown that in teaching Chinese as a foreign language, some problems cannot find a solution in syntax or semantics alone. A discourse approach incorporating syntax and semantics proves to be more helpful in finding a better solution in each case.

Notes

1. For a similar version of the outlook in Chinese, see Chu(1985b).
2. Both Li and I are aware of at least one use of tā for nonhuman entities. For example, zhèběn shū, wò yìjìng bā tā niàn de qūnghū lānshòu le 'I have learned the book (so well) that I know it by heart,' where tā after bā refers to shū, a nonhuman noun.
3. Barring some indeterminate situations such as an extremely verb-like coverb and a serial verb, a clause can be defined as a case frame in the Fillmorian sense. On the basis of the pressure of subordinating markers like -zhe and de, the notion of 'clause' can be easily extended to cover a larger structural unit, which may correspond to the sentence in English. This is where the interplay of several structures, such as the perfective -le and the durative -zhe, comes in. We will comment on it at reasonable length in Section 3. The topic chain is defined on the continuity of a topic:
a topic chain 'is composed of one or more semantically related clauses with a common topic, where a topic occurs at the initial position of the first clause to serve as a link among all the clauses'. (Li, 1985: 142). Finally, the paragraph is recognizable on the basis of the thematic unit.

4. This work is also mentioned in Chu (1986a) as an example of discourse analysis recently done on Mandarin.

5. The narratives in (14) and (15) are taken from short stories in the Central Daily News (Overseas Edition), Oct. 8, 1985, p.4.

6. But stative verbs may take -zhe for syntactic or pragmatic reasons. See below.

7. This interpretation of the verb makes it necessary to regard qên as the first verb of pivotal construction.

8. See Chu (1985a and 1986b) for the other function of ne.

9. Actually, Chu invokes Grices' Maxim of Relation, which says to the effect that if someone intentionally violates some rule or constraint, he/she must be trying to make a point. The violation here is the use of -zhe with a stative verb.

10. 'Paragraph' is a term used by Li (1985) and 'segment' is one used by Hinds (1979). There is some difference between them, though at this point the units can be referred to as either paragraphs or segments. But see below.

11. When a quote, whether direct or indirect, follows a verb of 'saying,' no -le can be used with the verb. (See Chang 1986:104; Chu and Chang 1987.)

References


1986. 'Stemming from the Verbal Suffix -Zhe,' JCLTA 22.1:43-64.


Time and Imagery in Chinese

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0. Introduction

Language, understood as an ever evolving and developing system, can and must create its own ontology, since there is no ready-made absolute ontology, prior to language, upon which language can base its description of the ontological world. This underlying assumption justifies the three mutually supporting themes that unfold concurrently throughout this paper: (1) as Whorf suggested, sometimes language can and does reflect culturally determined thoughts or realities; (2) a language can create its own ontology through a creative use of time, space, or other cognitive concept in forming its peculiar imagery; and (3) as far as grammar is concerned, some languages are more iconic, more dependent on images, while others are more abstract, more dependent on abstract grammatical categories. And within the same language, iconic principles and abstract ones are constantly in competition to result in grammatical sentences, which meet their compromised common demand, or ungrammatical ones, which do not.

The discussion is divided into five sections. Section 0 is the introduction. In Section 1, we argue that Whorf’s hypothesis need not remain logically circular forever, but can be supported with iconic imagery created by particular languages. In Section 2, we review Tai’s temporal sequence and other iconic principles in Chinese and argue that these principles strongly support the Whorfian hypothesis. In Section 3, we review Langacker’s ideas of scene and image and argue that imagery is a language’s peculiar way of perceiving and conceptualizing its world, and not just a way of expressing that world. In Section 4, we extend and refine Tai’s extremely important and seminal idea of temporal sequence as an iconic principle by dividing time into real, inferred, and imaginary times. All these three kinds of time are created by the Chinese language for structuring realities in its world. In Section 5, we argue that iconic principles such as those based on time sequence can compete with abstract principles in the grammar of a language. And we give as an example and discuss in great detail the competition between an iconic principle and an abstract principle in the placement of the perfective aspect marker -le in Mandarin Chinese. Finally, we reach a conclusion in Section 6.
1. Iconicity

Several decades ago, Benjamin Lee Whorf (1956) hypothesized that, since language may reflect thoughts, one can, in principle, discover culturally determined differences in thought through a study of various languages. Whorf's hypothesis has since been criticized, and often also rejected, typically as a mixture of fine linguistic insights and bad logical circularity. Such criticism may be fair, but it misses the point. To throw away the Whorfian hypothesis on the ground that it does not offer us a non-circular way to uncover linguistically expressed differences in thought is like throwing the baby out with the bath water. Whorf has shown us the possibilities of uncovering thoughts from linguistic expressions. It is now up to us, the new generation, to realize such possibilities.

Language and thoughts interact intimately to enrich each other, and they are in this sense mirror images of each other. In fact, this has become almost a truism since Quine (1960, 1969) and others elucidated it for philosophers. According to Quine, one can never uncover absolute ontology, can never really get to the bottom of things, because the theory which we adopt for such a scrutiny is already biased toward one of a large range of possible interpretations of the ontology, which it is supposed to examine objectively. Quine's gabaqai example is illustrative here. Seeing a rabbit running by, the native utters the word gabaqai. But the English speaker who is studying the native's language does not know and probably will never know whether gabaqai means simply 'rabbit,' or whether it means 'rabbit stage,' 'undetached rabbit parts,' and so on. Thus, the gabaqai example effectively illustrates Quine's point, namely, language will take us only as far as it can in our search for ultimate realities but it will not take us any further. Where language stops, there we may catch a rare quick glimpse of how language mirrors thoughts or how thoughts are arrested in language.

Although ontology is relative, languages cannot afford constantly calling attention to the uncertainty of things, because to ensure communication and social cohesion, every language must pretend that it describes an absolute and constant world. This is the layman's naive world, tailored from the relentlessly reflective and scrutinizing philosopher's relative world of ontology, and having all its uncertainties placed at the periphery, if not altogether removed from the system itself. When Whorf talked about realities and thoughts, he was talking about the layman's, not the thinker's, realities and thoughts, on which the language of the layman, or rather, the native speaker, is based. What better way is there, except through a study of
diverse languages, for understanding the particular realities and thoughts which must have motivated diverse cultures? This is the message of the Whorfian hypothesis, and it is a very plausible one.

If Whorf’s critics could have found ways to tease through the intricacies of language to discover thoughts and to isolate these thoughts from their linguistic expressions, they would have moved ahead in the direction suggested by Whorf, instead of merely offering criticism.

The general inability of linguistics in the past to pursue Whorf’s line of research can easily be attributed to diverse factors. These include the powerful dominance of the Chomskyan paradigm of transformational-generative grammar, the purely syntactic nature of the typological studies led initially by Greenberg, and the obsession of formal semantics with logical and mathematical rigor, especially in the approach originally suggested by Montague. However, these and many other reasons are only superficial and tend to obscure the true nature of our inability to appreciate and to act on Whorf’s insights.

The truth of the matter is that we have rejected the Whorfian hypothesis because it contradicts our belief that signs are arbitrary in the sense of Saussure. Saussure has taught us that linguistic signs are arbitrary, especially those signs which are names for concrete objects. If names for concrete things are arbitrary, how much more so ought sentences be, since sentences are signs for abstract thoughts? Yet, paradoxically, Saussure also taught us that each sentence is related to every other sentence in the same language. We found a clever way out of this paradox: we assume that sentences, although arbitrary signs themselves, are nevertheless related to each other.

This assumption is essentially at the heart of Chomsky’s conviction that syntax is autonomous, that sentences as signs can be studied independent of the realities which they are supposed to represent. Granted that signs can be studied as mere signs, organized and interrelated by principles of logic and mathematics, which may be innate as Chomsky claims, but there is a danger that such syntactic studies will end up as simple exercises in logic and mathematics, rendered mysterious only by our vague linguistic intuitions. The recent development of Chomskyan syntax into a more sophisticated model in terms of Government and Binding (GB) may be viewed as an important step taken to avoid that danger. Whether or not this danger is successfully avoided, now or in the future, the limitation of autonomous syntax is obvious: it will never take us beyond the realm of signs the realm of realities.
Yet, manifestly there are objects, events, and situations that we hold clear and vivid in our mind by means of language. One example of this is the case of onomatopoeic words and the sounds they represent. Such sound-imitating words are customarily dismissed as insignificant in number and unsophisticated in design when one is making a case for the arbitrary nature of signs. Yet, it is precisely in such examples that we see clearly that linguistic expressions can vividly depict realities to the point where a sign is virtually one and the same thing as the object it represents.

Signs fall into three categories depending on how they work to represent objects, according to the American philosopher C. S. Peirce. An icon is a sign which resembles its object; an index is a sign which has some factual or causal connection with its object; and a symbol functions as a sign because of its association with its object by a conventional rule. Onomatopoeic expressions are, then, iconic expressions. And since all other linguistic expressions are not factually or causally connected with their objects, they are not indexical. They are symbolic because their functions as signs are due to convention.

If one merely counted the number of onomatopoeic words and the number of non-onomatopoeic ones in the lexicon of any language, one would naturally conclude that every language is essentially symbolic and no language is iconic. Yet there is an important sense in which a language can be relatively more or less iconic in its supposedly purely symbolic expressions. All symbolic expressions, especially sentence-size ones, are structured by some principles of grouping and ordering which affect the components of each one of such expressions. These principles may be motivated by perceptual or conceptual mechanisms or they may be based on logico-mathematical operations. An expression organized according to a conceptual principle is more iconic than one organized according to a logico-mathematical principle. This is because the former mirrors somewhat closely the situation in the real world, how its components are grouped and ordered, but the latter does not. For convenience, let us call the perceptually or conceptually motivated rules iconic principles and the logico-mathematically based rules abstract principles.

It is generally to be expected, then, that the iconic principles and the abstract principles operate jointly in a linguistic expression, especially a sentence, because iconicity has its limits which have to be compensated by abstraction in order for the symbolization to be complete. Given a sentence, then, we can ask to what extent it is iconically structured and to what extent it is abstractly organized. Within the same language, some sentences may be relatively more iconic than others. Among languages, some may be
principled mainly on iconicity and only secondarily also on abstraction, and others may be principled in the reverse way. Languages of the former type are relatively more iconic languages and those of the latter type are relatively more abstract languages. Iconicity or abstraction may not be easy to quantify or measure, but given any two languages, we can impressionistically rank one of them as more iconic (or less abstract) and the other as less iconic (or more abstract).

Why do some languages favor iconicity and others favor abstraction? This is probably a question too difficult to answer. Still, one can search for linguistic features which correlate to a language's favoring iconicity or abstraction. This is exactly what Haiman (1980) did.

Based on the idea of iconicity diagram originated with Peirce (1932), Haiman has proposed the notion of diagrammatic iconicity. An iconic diagram is 'a systematic arrangement of signs, none of which necessarily resembles its referent, but whose relationships to each other mirror the relationships of their referents' (Haiman 1980:515). A technical diagram of a football line-up or of a radio circuit, for example, is an iconic diagram. Diagrammatic iconicity is a state in which signs are structured as in an iconic diagram.

Haiman recognized two types of diagrammatic iconicity. Type one, called the iconicity of isomorphism, is a one-to-one correspondence between meanings and their expressions, whether these expressions be single words or grammatical constructions. Type two, called the iconicity of motivation, is a direct reflection of meaning in its grammatical representation. Haiman mentioned sequencing as a clear example of the iconicity of motivation: other things being equal, events are described according to the time order in which they occur. Haiman claimed that the iconicity of isomorphism is a universal principle, whereas the iconicity of motivation is language-specific. Haiman also suggested that the degree of iconic motivation varies inversely with the size of a language's basic vocabulary and that 'semantic relations are rendered transparent in the lexically impoverished language, but ignored in the lexically elaborated language' (1980:537).

Haiman's iconicity of isomorphism is the assumption that a linguistic expression has a structure that mirrors exactly the structure of the reality behind this expression, for otherwise signs and objects would not have a simple clear correspondence relation. This concept is entirely different from our idea of abstraction, which states that linguistic expressions can be structured on some logico-mathematical principles but which does not
maintain that no reality is neglected or distorted in a linguistic expression, whether it is abstract or iconic. Although these are two different concepts, they agree in being the countervailing force against iconicity, which is called iconicity of motivation by Haiman.

There is tremendous insight in Haiman's contention that 'the grammar of the lexically restricted language ... is not only more cumbersome than that of the lexically elaborated language, but also more iconic' (1980:535). Other than citing a few supporting examples, Haiman did not give his contention a thorough justification. Perhaps Haiman's insight can be stated in a weaker form in two parts: (1) lexically restricted languages tend to have more cumbersome sentences, (2) the cumbersomeness can be resolved in one of two ways, either (a) by iconic grouping and sequencing or (b) by morphological and syntactic markings. The cases supporting Haiman's contention will be just those cases that resort to the method of (2a) for resolving the cumbersomeness of the sentences. Morphological and syntactic markings are presumably based on logico-mathematical principles rather than on iconic principles. Therefore, part (2) of Haiman's claim is essentially the same as our claim that languages can choose between being more iconic or being more abstract.

2. Temporal Sequence

That languages in varying degrees are principled on iconicity has been well known. A most striking example in English has to do with temporal sequence. Quite often, events occurring in a sequence in time are described in the sentence in a corresponding linear sequence. For example, the mounting part and the riding-off part cannot be reversed in order in the sentence The lone ranger mounted his horse and rode off into the sunset, because in the real world the lone ranger's mounting takes place first and his riding off, second. This kind of temporal sequence has been noted, for example, by Wilson (1975) and Levet (1981). While English as well as many other languages are studded with such iconic patterns, these are generally taken to be some nice sporadic examples that actually prove Saussure's dictum about the arbitrary nature of signs by contradicting it only marginally.

It is only with the publication of Tai's (1985) immensely important article on the extensive use of temporal sequence in Mandarin Chinese that we begin to realize that the principle of temporal sequence as well as other iconically motivated principles can be extensively used in particular languages, with the result that abstract principles may become largely inoperative or ineffective.
Tai's Principle of Temporal Sequence (PTS) states that, in Mandarin, 'the relative word order between two syntactic units is determined by the temporal order of the states which they represent in the conceptual world' (1985:50). The PTS is consistently supported by a large array of syntactic phenomena in Mandarin, such as conjoined sentences, restrictions on the placement of various kinds of adverbs, and restrictions on the position of nouns relative to verbs. As Tai pointed out in his concluding remark, PTS 'subsumes under one general principle a large number of word order rules hitherto regarded as unrelated. It governs the word order behavior of the majority of the syntactic categories definable in this language. PTS can therefore be regarded as a general syntactic constraint' (1985:63).

What makes Tai's PTS truly unique as a syntactic principle is its conceptual basis. Since PTS is defined in terms of the iconic notion of temporal sequence, it has a cognitive content that is generally lacking in the logicomathematically motivated rules of the transformational-generative kind.

An example should illustrate the power and insight of PTS. Compare the following pair of sentences in Mandarin: (a) tā zuò gōngqìng qìchē dào zhèr, (he-ride-public-automobile-come-here,) 'He came here by bus.' (a'); (b) tā dào zhèr zuò gōngqìng qìchē, (he-come-here-ride-public-automobile,) 'He came here to catch the bus.' (b') In sentence (a), the part zuò gōngqìng qìchē 'by bus' precedes the dào zhèr 'came here,' because the person first took the bus and later he arrived here. In sentence (b), the order between these two parts is reversed, because the person first arrived here and later he took the bus to go somewhere else. Thus, the ordering of these two syntactic parts mirrors faithfully the actual time sequence of two corresponding events in the real world. Notice, however, that the English translations of these two sentences, (a') and (b'), are ordered by placing the verb before the prepositional phrase as in (a') or before the infinitive phrase as in (b').

It is true that the Mandarin sentence (a) can also be rendered somewhat awkwardly into the English sentence (a'') He took the bus to come here, so that English can also be shown to obey some sort of temporal-sequence principle. But the principle of ordering operating in (a'') is still a principle that requires verbs to precede infinitives. One cannot imagine saying (a'') the other way, at least not in conversation: *He to take the bus came here. There may be a small-scale principle of temporal sequence lurking in English, but it seems that quite often such a principle is overwhelmed by more powerful morphological and syntactic constraints so that temporal-sequence patterns become virtually unnoticeable. In other words, as far as English is concerned,
iconic patterns are generally subsistent on abstract patterns. In Chinese, as Tai has shown, the reverse is true: words and grammatical parts are iconically sequenced, requiring little or no syntactic or morphological markings of an abstract kind.

If Chinese, as Tai claimed, is some sort of iconic language, one would expect to find other iconic principles of grammar besides the principle of temporal sequence operating in Chinese. In fact, Tai has since uncovered several such principles and has discussed them in Tai (1989). One such principle operates on spatial expressions. Following Clark (1973) and others, Tai assumed that as children we have developed a basic set of possibly universal perceptual rules for understanding and talking about spatial relations in terms of containing, supporting, and touching. Specifically, as Clark reported, children operate with the following three rules: Rule 1. If B is a container, A belongs inside it; Rule 2. If B has a supporting surface, A belongs on it; Rule 3. If A and B are related to each other in space, they should be touching. These possibly universal perceptual rules need not be innate, but may be derived from experience. Tai pointed out that, as insightfully observed by Johnson (1987), we experience our bodies both as containers and as objects in containers constantly.

From such a perspective, we can see clearly that English and Chinese operate with two strikingly different systems for expressing spatial relations. English employs a one-step method which requires the use of prepositions such as at, on and in which seem to be of a homogeneous kind but which actually stand for one-, two-, and three-dimensional spatial relations, respectively. By contrast, Chinese operates with a two-step schema. First, Chinese uses the word zài ‘to be located at/on/in’ to indicate the general nature of the relation, namely, that it is a spatial relation. As a second step, Chinese elaborates this relation by further indicating whether it is to the side of, on the top of, or inside of, something that the thing in question is located. And this is achieved by means of a network in which the perceptual container and the perceptually contained are treated as the possessor and the possessed. An example may illustrate. Consider:

(1) 书在箱子的左边。
shū zài xiāngzi de zuǒbiān
book - be at/on/in - box - 's - left
'The book is at the left of the box.'
(2) 书在箱子的上头。
shū zài xiāngzi de shàngtou
book - at/on/in - box - 's - top
'The book is on the top of the box.'

(3) 书在箱子的里头。
shū zài xiāngzi de lǐtou
book - at/on/in - box - 's - inside
'The book is in the box.'

We notice that each of the three sentences is of the pattern X zài Y, which indicates the general nature of the relation obtaining between X and Y, namely 'X is located at/on/in Y.' Of special interest is how elements within Y are structured. Y is composed of two nominals, y1 and y2, where y1 indicates a container/possessor and y2 a contained/possessed. These two parts are linked by de 's', to form the sequence y1 de y2. It is invariably the case that y1 precedes y2. Thus, we have the sequences xiāngzi de zuòbian 'box's left,' xiāngzi de shàngtou 'box's top,' and xiāngzi de lǐtou 'box's inside.' The inside part of a box is one of the parts of a box and in that sense it is contained or possessed by the box. Similarly, the top part of a box is contained or possessed by the box. The space outside of the box but neighboring the box to its left is not properly contained in the box. Yet a box possesses several neighboring areas and the area to its left is just one such area.

Tai called the possessor-possessed relation the whole-part relation, since quite often the possessor is a whole and the possessed is one of its parts. And he discovered that if two nominals are in a whole-to-part relation, the nominal denoting the whole precedes the nominal denoting the part, in grammatical order.

Notice that corresponding to the Mandarin fixed sequence y1 de y2, English exhibits two options: A's B (e.g. table's top) and B of A (e.g. top of the table). Mandarin allows no such choice, and the fact that y1 is the whole and y2 is the part determines the word order between y1 and y2 in the sequence y1 de y2. In this sense, the fixed Chinese sequence is iconic. English, though also identifying a whole and its part, does not base its word order on this whole-to-part relation, but rather allows two alternative orders marked by abstract morphological or syntactic elements. In this sense, the variable English sequence is abstract.

Why do Mandarin speakers make y1 precede y2, and why does Mandarin mention the whole before its part? Is it because Mandarin speakers perceive...
the whole as prior in time to the part, or is it because they just talk about the whole before its part? To opt for the second choice is equivalent to regarding the sequence as a pure convention. To opt for the first choice can be speculative. There is, however, a compromise. We can assume that the y1 of y2 convention has its origin or motivation in recurring patterns of reality in which one must first locate the whole and then its part. Suppose that we are both outside of a house and you want to know where my book is located. I can tell you that The book is inside the drawer of the table in the house. To verify what I say as true, you could go into the house, find the table, locate the drawer of the table, and find the book, in that time order. Thus, in Mandarin, we would say

(4) 书在房子的桌子的抽屉的里头。
    shū zài fángzǐ de zhūōzi de chōuti de lìtōu
    book-be at/on/in-house -'s-table -'s-drawer-'s inside
    'The book is inside the drawer of the table in the house.'

With the exception of shū 'book,' the nominals in the sentence are ordered according to the time order in which we move into their vicinities and see them. This order conforms to the whole-before-part principle. If an unspecific book rather than a specific book is concerned, we can even move the word shū 'book' to the very end of the sentence and achieve an order which conforms to the real order in which we approach them. Thus, we also have:

(4') 在房子里的桌子的抽屉的里头有书。
    zài fángzǐ de zhūōzi de chōuti de lītōu yǒu shū
    be at/on/in house's table's drawer's inside have book
    'There is a book inside the drawer of the table in the house.'

Notice that, in this typical example, the objects connected by the chain of whole-to-part relations are grammatically ordered by placing the whole before the part in Mandarin, but the part before the whole in English. Perhaps there is a simple explanation for this contrast. In describing the location of an object, two metaphors are possible. In one, we go to the object, and in the other the object comes to us. If we go to the object, since the object is located in a larger object or in a number of increasingly larger objects, we have to go to the larger objects before we can go to the smaller ones. That is, we have to experience the whole before we can experience the part. On the other hand, if the object comes to us, then it brings with it increasingly larger embedding objects. That is, we experience the part before we experience the whole.
If the Chinese world and the English world are essentially the same world, then Chinese and English use different metaphors for the same piece of reality. However, what justifies the chosen metaphor? Is it not the case that metaphor is just a chosen way of looking at things, of perceiving a reality? The reality may be the same, but different speech communities can perceive them differently by adopting divergent metaphors. Therefore, the word order principle in Mandarin requiring the whole to precede the part is iconic in two senses. It is iconic because a word is not treated as an element in a grammatical category, but as indicating the whole or the part so that the whole is mentioned before the part. This principle is also iconic in that it is based on a perceptually motivated metaphor in which the speaker moves to the object, but not the other way around. It may be worthwhile pointing out that, while Chinese and English both adopt some metaphor, it is Chinese alone, in this case, that sequences its grammatical elements according to the metaphor. English, having the choice between the patterns A's and B of A, need not sequence its words according to the metaphor it adopts. In this sense, Chinese is more iconic than English, and English is more abstract than Chinese.

Here it may be worthwhile to pause momentarily to take a closer look at how Mandarin expresses the relation between the whole and the part, between the container and the contained, and between the possessor and the possessed. In Mandarin, we have xīguā de pí 'watermelon's skin,' xīguā de zǐ 'watermelon's seeds,' xīguā de zhòngliàng 'watermelon's weight.' If we insist on making a fine distinction among the concepts represented by these three expressions, then the first is a whole-part relation, the second is a container-contained relation, and the third is a possessor-possessed relation. Although these three concepts are different, they are all expressed by the pattern yī de yī. Assuming that one of these three concepts is iconically primitive and the other two are derived, which one is primitive and which ones are derived? Just as in English, 'watermelon's seeds' in Mandarin is ambiguous; it may refer to the seeds as contained in the watermelon or as removed and separated from the watermelon. In order to make this very fine distinction, Mandarin resorts to an explicit container-contained expression and uses the marked expression xīguā lǐtòu de zǐ 'watermelon-inside's seeds' for watermelon seeds viewed as contained in the watermelon. Yet, this expression is patterned also on yī de yī, except that yī here is the compound xīguā lǐtòu 'watermelon-inside.' So we are back to square one. We are stuck with the pattern yī de yī, not knowing which one of the three iconic patterns is primitive and which ones are derived.
We are instantly reminded of Quine's gabagai example. Armed with the concepts of whole-part, container-contained, and possessor-possessed in our theory, we have set out to discover which one of these three concepts is denoted by an expression of the form y1 de y2. But there is no way we can be certain; all we know is just that this expression is an expression of the form y1 de y2. Just as gabagai may be 'rabbit,' 'undetached rabbit parts,' 'rabbit stage,' the pattern y1 de y2 may denote a whole-part, a container-contained, or a possessor-possessed relation. In other words, as linguists we can tell the difference among these three distinct notions, but as laymen all we know is that y1 de y2 indicates a general notion abstracted from or vague among the three theoretic notions.

It is here that we become fully appreciative of Quine's insight that we cannot go beyond the expressions of a language to uncover its ultimate ontological world, whether this be peculiar to the speakers of the language or be universally determined. Natural language expressions are where ontological scrutiny begins and ends. Suppose that we adopt this view by Quine. Then the y1 de y2 pattern begins to have a far-reaching implication. The y1 de y2 pattern is an iconic representation whose ontological import is simply the general notion around which the notions of whole-part, container-contained, and possessor-possessed surround. Here, language and reality are one and the same. Here, as Whorf rightly suggested, language reflects thoughts.

Earlier in this paper, we have contended that to reject the Whorfian hypothesis as logically circular without salvaging its rich insights is unwise. And we have also implied that with some luck and ingenuity we may be able to uncover thoughts from linguistic expressions. If this goal did not seem realistic, it was because dominant formal approaches to grammar have forced us to view grammar as a system of abstract rules which allows few or no iconic principles. However, in a truly innovative manner, Tai has uncovered not only the principle of temporal sequence, but also the whole-before-part principle as well as some other interesting principles.

There is little sense in saying that these iconic patterns do not reflect ontological patterns. They do, because ontology begins and ends with language, as Quine has repeatedly urged. Therefore, the iconic patterns in Chinese must be taken to be as clearly and accurately mirroring Chinese realities as linguistic expressions can be. Interpreted in this way, Tai's discovery of iconic principles in Chinese is of far more importance than he himself seems to be aware of. Tai's intention is merely to show that, unlike many Western languages, Chinese is to a large extent iconic, and he has
carefully and explicitly disassociated himself from the supposedly notorious Whorfian hypothesis. However, it seems clear that Tai's discovery is precisely the kind of evidence that we badly need to support Whorf's insight that language can reflect thoughts.

3. Realities Created by Language

The most crucial kind of supporting evidence for Whorf's insight does not lie in the different iconic patterns or metaphors that each language to varying degrees adopts and that Chinese employs extensively. If one can demonstrate that languages can create realities which are unique to and interpretable only in terms of these particular languages, then these realities will constitute truly strong supporting evidence for Whorf's insight that language reflects thoughts.

In a monumental work that promises to lay some important foundations for cognitive grammar, Langacker (1987) has attempted to restate Whorf's insight in a more cautious tone. According to Langacker, 'if one language says I am cold, a second I have cold, and a third It is cold to me, these expressions differ semantically even though they refer to the same experience, for they employ different images to structure the same basic conceptual content' (1987:47). Therefore, Langacker claimed that 'meaning is language-specific to a considerable extent' and that 'full universality of semantic structure cannot be presumed even on the assumption that human cognitive ability and experience are quite comparable across cultures' (1987:47). Langacker seems to be saying this: Even if human cognition and experience are essentially the same, different languages based on different cultures can employ differing images to structure an identical concept to result in divergent meanings. Thus, instead of claiming that language reflects thoughts, one would claim that possibly identical concepts are expressed in different images or metaphors in various languages.

The concepts may not be different but the images are. How, then, does imagery work? An image 'structures a scene in a particular way for purposes of linguistic expression, emphasizing certain facets of it at the expense of others, viewing it from a certain perspective, or constructing it in terms of a certain metaphor' (1987:39). As a result, 'two roughly synonymous sentences with the same content words but different grammatical structures--including, in particular, sentences generally analyzed as being transformationally related--are claimed instead to be semantically distinct by virtue of their different grammatical organization per se' (1987:39). In
other words, they present the same scene through different images which selectively highlight some facets of the scene at the expense of the other facets. Consider, for example, sentences (a) and (b): (a) He sent a letter to Susan; (b) He sent Susan a letter. These two sentences have the same truth value and can be used as different options for describing the same event, but they differ semantically. Because (a) uses the preposition to, it emphasizes the path traversed by the letter with Susan as the goal. By contrast, (b) emphasizes the resulting state in which Susan possesses the letter. Both the 'path' and the 'resulting state' come with the scene, but 'path' is highlighted in (a) and 'resulting state' is highlighted in (b).

In this way, images 'describe our ability to construe a conceived situation in alternate ways--by means of alternate images--for purposes of thought or expression' (1987:110). 'Two images of the same situation may differ as to which features of it are selected for explicit attention, the relative salience of these features, the level of abstractness or specificity at which it is treated, the perspective from which it is viewed, and so on' (1987:110). Consequently, 'meaning is not objectively given, but constructed, even for expressions pertaining to objective reality,' and we 'cannot account for meaning by describing objective reality, but only by describing the cognitive routines that constitute a person's understanding of it' (1987:194).

If images employed in particular languages are viewed as specific conventions, then, as Langacker puts it tersely, 'semantic structure is conceptualization tailored to the specifications of linguistic convention' (1987:99). Consequently, semantic analysis requires the explicit characterization of conceptual structure. Langacker admits that possibly this goal is quixotic.

Nevertheless, to attack meaning on its home ground, we must do all we can to analyze and describe concepts involved in our mental experience. If any attempt at describing the absolute, pure conceptual structure behind the maze of linguistic structure is not entirely realistic, it is perhaps because moderately formal theory constructed for such a descriptive purpose is necessarily far more impoverished than the natural language under description. At some point, one would have to resort to concepts couched in natural-language terms to make one's description exhaustive. At such juncture, the formal theory is suddenly endowed with a power that equals the all-descriptive and all-encompassing power of natural language itself. Yet, no logical or mathematical systems constrain statements made in natural-language terms to allow these statements to be rigorously verified as being
true or false. The theory then risks reducing the whole enterprise of sketching a conceptual structure to an exercise in common-sense speculation.

However, this seemingly quixotic project need not be conducted in this risky way. Suppose that we do not aim at discovering a comprehensive and complete structure of human conceptualization. Suppose that we are successful in selectively sketching a few areas or even just a few remarkable instances with a few technical notions based on human concepts. Then we would have shown that it is in principle possible to distinguish concepts from their linguistic representations, thereby proving that a cognitive approach to semantics is well justified. These concepts, as Langacker has repeatedly emphasized, need not be absolute ones, but they are as close to the absolute ones as linguistically-derived concepts can be.

Langacker is most convincing, and creatively so, when he undertakes less ambitious tasks of this kind. His analysis, for example, of the concept ARROW-HIT-TARGET is dramatically vivid. In order to describe this concept and many others, Langacker needed a host of technical notions. First, a predication is the semantic pole of any linguistic expression. A predication has a scope, which is those portions of a scene that it specifically includes. The scope is the context necessary for the characterization of the profile, which is the focal point of the scene and which is the entity that the predication designates. One scene may bear a schematic relation to another such that the former can be elaborated partly by the latter. That part of the schematic structure which is elaborated by the latter is called the elaboration-site (e-site).

For example, if I say under, I can mean under the table, under the chair, etc., that is, under X. But I can make it clear what that X is by saying specifically, for example, under the table. Here X is the elaboration-site which is occupied by the table. More technically, in UNDER-THE-TABLE, we have an e-site which corresponds to the profile of THE-TABLE. If an object is situated with respect to another or is moving toward it, then the former is a trajector and the latter is its landmark. Thus, if the football is under the table, then the football represents a trajector and the table represents its landmark.

Now, we are ready to describe the concept ARROW-HIT-TARGET. HIT designates a process in which a trajector moves through space until it makes forceful contact with a landmark. The schematic landmark of HIT is an e-site that corresponds to the profile of TARGET, and its schematic trajector is an e-site that corresponds to the profile of ARROW. The composite structure ARROW-HIT-TARGET is an exact parallel to HIT except that its trajector and
landmark are nonschematic (i.e. elaborated), having inherited the specifications of the two nominals. There is another way to understand this concept. In HIT, an unspecified trajector moves toward and finally impacts on an unspecified landmark. In HIT-TARGET, the picture is the same, except that the landmark is now specified as TARGET. In ARROW-HIT, the picture is again the same, except that, instead of the landmark, the trajector is specified, namely, it is ARROW. Finally, in ARROW-HIT-TARGET, the picture is still that of a trajector hitting a landmark, but now both the trajector and the landmark are specified: the trajector is ARROW and the landmark is TARGET.

These four situations are shown in revealing diagrams by Langacker (1987:317). As the diagrams indicate, there are three stages in the process ARROW-HIT-TARGET: first, the arrow is away from the target, then it moves close to it, and finally it impacts on the target. In the English expression *The arrow hit the target*, these three stages are combined into a single undivided process and are represented by the verb *hit*.

If Langacker's analysis of ARROW-HIT-TARGET is essentially correct, then we would expect a more iconic language than English such as Chinese to employ a more iconic expression to represent this process as a sequence of two or three stages. And indeed that is precisely the case in Mandarin. Corresponding to *The arrow hit the target*, we have in Mandarin *jiàn shè zhòng le mǔbiāo*, (arrow-shoot-impact on-PA-target,) 'the arrow hit the target.' Clearly, *shè 'shoot'* represents the first and second stages, and *zhòng 'impact on' represents the third stage. To be exact, *zhòng* should be rendered as 'to land within the surface of the target.' Thus, while hitting is largely a matter of impacting in English, it is largely a matter of successfully landing in Chinese. Thus, the two equivalent sentences, one in English and the other in Chinese, express not an identical concept but a pair of roughly equivalent concepts. In English, hitting is just an unanalyzed process ending with the successful impacting of the trajector on the landmark, but in Chinese hitting is a temporal sequence having two parts, of which the first indicates shooting and the second, successful landing.

Faced with an example like this, should we insist that there is a still-to-be-discovered or a never-to-be-discovered absolute universal concept of hitting, or should we just acknowledge, along with Whorf and perhaps also Langacker, that languages can create their own different worlds? If we choose the first option, then cognitive grammar seems a futile exercise in creating a world out of a language, a world that does not exist except in the linguist's mind. However, if we choose the second option, then we begin to
see the rich variety of worlds that languages, and not linguists, create. I believe the second choice is the right one.

All kinds of language, whether mathematical, logical, musical, literary, or artistic, create their own realities. Why should natural language, the most prototypical of all forms of language, be any different? Beethoven's sixth symphony is a musical reality created by the language of music. In the same way, THE ARROW HIT THE TARGET is a reality created by natural language. Since languages differ, the realities they create may also differ. Therefore, just as the English language is different from the Chinese language, the English world of realities is different from the Chinese world of realities.

If communication by means of translation or interpretation is always successfully achieved, it is not because the two speech communities have the same world but because what is not shared by both of the two worlds is not communicated. In the example of ARROW-HIT-TARGET, what is communicated in translation or interpretation is the fact that there is a process of hitting and what is not communicated is the English ideas of impacting versus the Chinese idea of successful landing together with the Chinese idea of hitting as having two stages.

Langacker has been careful, like Tai, in disassociating himself from Whorf, presumably for fear of being criticized as naive or logically circular, just as Whorf has been. However, the full impact of Langacker's brilliant insight that language profusely employs imagery to describe realities is lost without the context of a Whorfian hypothesis. Language grows with the ontology that it describes. It does not have the luxury or leisure of waiting for the omniscient theoretic-linguist's absolute world of realities to be set up in order for it to come in with a culturally-based system of description. In other words, particular languages are not first given the absolute concepts of coming and going, for example and then asked to describe these concepts in a culturally-determined way.

Just as language is created by realities, so realities are created by language. In Langacker's terms, there is an ideal absolute general scene on which each particular language imposes an image to make it specific. That image is the particular language's reality; there is no other reality. Since the linguist can adopt an omniscient and omnipresent view, he can entertain the idea of an absolute scene. But language cannot, and members of a speech community cannot. First, they must identify something as a separate and distinct situation and then they must try to understand it in terms of an image. That image is how they understand the situation and that image is their
perceived reality. It is for reasons like these that we claim that language can create its own realities and indeed language must create its own realities since no one else will do its job for it.

4. Chinese Imagery

The subtle difference between the English concept of ARROW-HIT-TARGET and its counterpart in Chinese may be a striking example in support of the contention that language can create realities, but it is not of the most compelling kind. Truly convincing examples are to be sought among a language’s unique imagery.

A situation, process, or event is often a complex or composite concept, having several parts or components. Langacker’s scene is roughly equivalent to the collection of these components viewed as having a fluid, varying structure. Langacker’s image then acts on this fluid structure to give it a fixed structure. Thus, a scene allows for several alternative images, and these images may form contrasts within a language or across different languages. Thus, in the example of ARROW-HIT-TARGET, the process is divided into three stages, each involving a target and a landmark. These three stages are (1) the arrow is away from the target, (2) the arrow is close to the target, and (3) the arrow (a) impacts on or (b) lands on the target. Of course, when other languages are considered, this scene will have a different shape. For convenience, let us assume that it is as we have sketched. Then we can see that English groups (1), (2) and (3)(a) together. By contrast, Chinese groups (1) and (2) together, from which (3)(b) is separated.

In this way, the English image differs from the Chinese image, though both are selected from a supposedly universal scene. Since a tentative universal scene can be constructed for these two images, this example can be interpreted in two ways: (a) there is a universal scene and that is the absolute reality and the so-called images are not realities but are merely ways of talking about the absolute reality sketched by the scene, (b) there are different images and hence there are different realities and these, unlike the postulated universal scene, are supported by direct linguistic evidence.

The first interpretation is consistent with the so-called universalist position and the second interpretation conforms to a relativist stance, eminently championed by Whorf. Langacker’s combined use of scene and imagery is an ingenious compromise. Scene is somehow vaguely given to us as a universal concept, and images are tailored from the scene through cultural
choices. Thus, both the universalist and the relativist will find in Langacker not a perfect comrade, but an amicable friend.1

How we as human beings manage to mentally grasp something as a scene, apart and complete, may remain a mystery. Granted that we grasp a scene in its totality, we need not perceive it as a fluid structure but may perceive it as an unanalyzed whole. If we do not have to convey a particular scene to each other as members of the same speech community, then that scene can remain forever unanalyzed and unstructured. Any method for analyzing a scene must (1) individuate a scene into components, (2) place these components in separate groups, (3) place the resulting groups in separate higher-ranking groups and repeat this process until it ends up with the highest-ranking group, and (4) sequence the components within a group and also the groups within a higher-ranking group. Operations (1), (2), and (3) together determine the structure of a scene; operation (4) is needed for representing the parts of a scene in a linguistic linear order.

From this point of view, language builds fixed 'scenes,' which are images, and different languages build different images. If images across languages tend to coincide roughly with each other, that is perhaps largely due to the fact that individuation and grouping follow comparable perceptual or conceptual strategies across languages. Concepts seem universal not because there are fluid, varying scenes from which various language-specific images are tailored but because concepts across languages are subject to the same human perceptual and conceptual constraints in their formations. In other words, concepts are actually language-specific, although principles for concept formation are largely universal.

To see how individuation, grouping and sequencing work, consider the following pair of English and Chinese sentences, which are roughly equivalent in meaning: (1) The one who was drunk walked into the wrong room; (2) hēzuǐ de țú cuò le fángjiān, (drunk-one walk-mistakenly-PARoom,) 'the one who was drunk walked into the wrong room.' Applying individuation to the English concept expressed in (1), we obtain the following components: (a) 'the one,' (b) 'who was drunk,' (c) 'walk,' (d) 'Past Tense,' (e) 'into,' (f) 'wrong,' (g) 'room.' Applying individuation to the Chinese concept expressed in (2), we obtain the following components: (a') 'that one,' (b') 'drunk,' (c') 'walk,' (d') 'Perfective Aspect,' (e') Ø, (f') 'mistakenly,' (g') 'room.' While the English concept has seven components, the Chinese concept has only six, since (e') is empty. Other than this, the components are pair-wise similar between the English concept and the Chinese concept. By grouping, we obtain, for English, (1') {{(a), (b)}}, {{(c), (d), (e)}}, {{(f), (g)}}}, and for
Chinese, \((2')\) \{\{(a'), (b')\}, \{(c'), (d'), (f')\}, \{(g')\}\}. \((1')\) and \((2')\) are clearly two similar structures.

Notice that both \((1')\) and \((2')\) contain a component indicating a mismatch [i.e. \((f)\)] or a mistake [i.e. \((f')\)]. While in the Chinese concept \((2')\), the mistake is grouped together with the act of walking, in the English concept \((1')\), the mismatch is grouped together with the room. When we translate the English sentence \((1)\) into the Chinese sentence \((2)\), or vice versa, we preserve the idea that there is a mismatch/mistake, but we fail to convey the subtle notion that the mistake is connected with walking or that the mismatch is connected with the room. From the fact that the mistake is connected with the action or that the mismatch is connected with the room, we need not conclude that the Chinese speaker blames himself for the mistake while the English speaker blames the room for the mismatch. But there is no denying that the difference in connection exists.

Given \((1')\) and \((2')\), one can apply sequencing to elements within each group, whether these elements be components or groups themselves. Thus, we obtain \((1'\text{''})\) \{\{(a) > (b)\} > \{(c) > (d) > (e)\} > \{(f) > (g)\}\}, and \((2'\text{''})\) \{\{(b') > (a')\} > \{(c') > (f') > (d')\} > \{(g')\}\}. These two sequences correspond closely to the surface word orders in the two sentences \((1)\) and \((2)\).

Since \((1')\) and \((2')\) are not exactly identical concepts, how do we know that their representations, \((1)\) and \((2)\), are exact translations of each other? The answer is that they are not exact translations, but are just correct translations. How, then, do we know that they are correct translations? Because they represent two similar concepts. In what sense are the two concepts \((1')\) and \((2')\) similar? In the sense that they have essentially the same components which are grouped in roughly the same way. It is easy to perform simple modifications on \((1')\) and \((2')\) to make them identical in structure, by assuming an empty component, \(\emptyset\), and placing it where it is needed. Thus, we rewrite \((1')\) and \((2')\) as \((1'\emptyset)\) and \((2'\emptyset)\) below: \((1'\emptyset)\) \{\{(a), (b)\}, \{(c), (d), (e), \emptyset\}, \{(f), (g)\}\}, \((2'\emptyset)\) \{\{(a'), (b')\}, \{(c'), (d'), \emptyset, (f')\}, \{(\emptyset), (g')\}\}. Clearly, \((1'\emptyset)\) and \((2'\emptyset)\) have the same structure, and they have the same components except where one component is matched by an \(\emptyset\).

Therefore, we have a technical way of making precise the idea of (correct) translation. If two sentences are represented by two concepts whose structures can be normalized into the same structure by using the empty component \(\emptyset\), then they are translations of each other. Of course, we must constrain the use of \(\emptyset\). For example, if we state that \(\emptyset\) cannot occur more than once in any group then this constraint will successfully ensure that \((1'\emptyset)\)
and (2'∅) are mutually translatable. Although it may not be easy to identify and state the constraints on the use of ∅, it is in principle possible to achieve that. If this is correct, then translatability need not compel us to resort to an ideal universal concept as a proto-type for the two concepts involved in a translation.

We have in the example above treated a concept, understood as a scene, as having basic elements which translate neatly into lexical items. This is merely for the purpose of simplifying our illustration and comparison. In general, basic elements in a scene do not translate into lexical items but combinations of them may translate into lexical items or phrases. Thus, for example, according to Langacker, as previously noted, HIT is a scene in which an unspecified trajector moves toward and finally impacts on an unspecified landmark. This scene has three stages and we may therefore assume that this scene has three components ordered by time, and their combination translates into the lexical item hit.

Technically, we have HIT = \{\{trajector-away-from-landmark\}, \{trajector-close-to-landmark\}, \{trajector-impact-on-landmark\}\}. Similarly, ARROW-HIT-TARGET is a scene in which an arrow moves toward and finally impacts on its target. Therefore, we have ARROW-HIT-TARGET = \{\{arrow-away-from-target\}, \{arrow-close-to-target\}, \{arrow-impact-on-target\}\}. This more elaborate scene translates into the phrase arrow hit target. As Langacker has shown with his ARROW-HIT-TARGET example and many others, one can use lexical items and larger linguistic expressions as starting points to construct a scene, but one eventually transcends these starting points to reach a scene whose richness its linguistic representation does not initially reveal.

A language can and does create its own imagery, which are language-specific scenes in Langacker's terminology. What it creates are not just images that somehow distort the real ontology of things, but in many cases, images which may be viewed as the only ways in which speakers of this particular language perceive their realities. To support this contention, we must show cases where there can be no ontology based on known physical, psychological, or other theories but where a language has to create its own ontology. One remarkable supporting case involves the creation of an imaginary time that structures an imaginary sequence of events in Mandarin Chinese.
Consider the following sentences in Mandarin Chinese:

(C1) 他进了厨房。
tā jìn le chūfāng
he-enter-P(efective) A(spect)-kitchen
'He entered the kitchen.'

(C2) 他走进了厨房。
tā zǒu jìn le chūfāng
he-walk-enter-PA-kitchen
'He walked into the kitchen.'

(C3) 他走进了厨房来。
tā zǒu jìn le chūfāng lái
he-walk-enter-PA-kitchen-come
'He walked into the kitchen, where I was.'

(C4) 他走进来。
tā zǒu jìn lái
he-walk-enter-come
'He walked into where I was.'

(C5) 他走了进来 (*厨房)。
tā zǒu le jìn lái (*chufang)
he-walked-PA-enter-come-(kitchen)
'He walked into where I was.'

(C6) *他走进了来 (*厨房)。
* tā zǒu jìn le lái (*chufang)
he-walk-enter-PA-come-(kitchen)

(C7) 他走进来了 (?厨房)。
tā zǒu jìn láile (?chufang)
he-walk-enter-come-PA-(kitchen)
'He walked into where I was.'

(C8) 他出了厨房。
tā chū le chūfāng
he-exit-PA-kitchen
'He went out of the kitchen.'
These sentences lead us to envision a scene of entering and a scene of exiting in Chinese, and each of the two scenes can be elaborated by making precise how the acts of entering and exiting are carried out. Starting with (C1), we see that there is the most general scene of entering, namely, somebody entered something. In our example, the entering person is specified as *ta 'he' and the thing entered is specified as chufang 'kitchen.' Thus, both the trajector and the landmark are specified. The scene can be elaborated by making precise whether he entered by walking, by running, or by crawling. (C2) indicates that it is by walking. (C3) further indicates that he walked not away from me (the speaker) but toward me. It is possible to disregard the kitchen in the scene, so that (C4) does not mention the kitchen. This will result in a scene where the trajector is specified but the landmark is left totally unspecified.
The scene of exiting is elaborated in a parallel way. It starts out as a scene in which the trajector and the landmark are fully specified but the act of exiting allows for elaboration, as indicated in (C8). The elaboration is done by making it clear that the exiting is by walking, as indicated in (C9). The exiting is further elaborated by specifying that the person walks away from the speaker, as indicated in (C10). As indicated in (C11), the landmark can be left totally unspecified.

Of special interest here are the verb sequences zōu jìn lái, (walk-enter-come), and zōu chū qù, (walk-exit-go). Do they each indicate that three acts are performed in a temporal sequence? If so, then they support Tai's idea of temporal sequence. However, they seem to constitute a case whose import may go far beyond Tai's expectation. It is likely that only one act is performed, not three. However, the Chinese language, in order to describe this complex or elaborate act is led to create a scene that unfolds itself in stages that are defined not in real time but in imaginary time. In other words, there are three aspects or components in the concept ZOU-JIN-LAI, namely, zōu 'walk,' jìn 'enter,' and lái 'come.' These three parts occur simultaneously, without any clear time order. But in order to represent them in a linear order, one must pretend that they constitute three successively unfolding stages, if one opts for an iconic representation rather than an abstract one. Since Chinese already uses real time to sequence parts in a scene, the imaginary-time principle of sequencing is a simple extension of the real-time principle of sequencing. In this way, speakers of Chinese create two kinds of time: real time and imaginary time.

Imaginary separate acts or events are ordered in imaginary time not randomly or capriciously. Imaginary-time order is generally based on some sort of salience rank-order. For example, given 'walk,' 'enter,' and 'come,' it is easy to see that 'walk' is a simple act, 'enter' is less simple, and 'come' the least simple, in the following sense: WALK requires a trajector but not necessarily a landmark; ENTER requires (1) a trajector and a landmark and (2) that the trajector ends up being contained in the landmark, and, finally, COME requires a trajector and the implicit location of the speaker with respect to the moving trajector. Thus, for example, in English, we say He walked. He walked into the house. He walked into the house, approaching me. Here walk is the verb, into the house is a prepositional phrase modifying walked, and approaching me modifies the whole verb phrase walked into the house. In this way, different degrees of salience are expressed in English through various morpho-syntactic markings. Such markings may have formal advantages, but sometimes they can be a hindrance. For example,
sentence (C4) is an everyday expression in Mandarin, but we cannot find any idiomatic translation in English for it. For example, it is not grammatical or idiomatic in English to say something like *He walked into to come, or *He walked by entering to come.

Although in English one does not have an idiomatic expression comparable to the Chinese expression tà zǒu jìn lái le, (he-walk-enter-come-PA), English can nevertheless string together a small number of virtually simultaneous actions by assigning them to different categories. According to Talmy (1985), in English, a verb can be followed by up to three components describing the 'path' along which a moving object travels. Thus, he gave the following as an example: (e1) The man ran back down into the cellar. As Talmy put it, 'in this ordinary sentence, English has both packed in and backgrounded the information that the man's trip to the cellar was accomplished at a run (ran), that he had already been in the cellar once recently so that this was a return trip (back), that his trip began at a point higher than the cellar so that he had to descend (down), and that the cellar formed an enclosure that his trip originated outside of (in-)' (Talmy 1985:123). Thus, four actions are described together. One of these actions is expressed by the verb ran, a second by the adverb back, a third by the adverb down, and a fourth by the preposition into.

Instead of presenting these four essentially simultaneous actions as ordered in an imaginary time of the Chinese kind, English assigns them each to a specific grammatical category, and orders them according to their grammatical categories. Thus, the verb ran precedes the adverbs back and down, which in turn precede the preposition into. Of interest here is that the categories are assigned according to a salience gradation of simplicity. RUN requires only a trajector, both BACK and DOWN require a trajector and a landmark, and INTO requires (1) a trajector and a landmark and (2) that the trajector end up being contained in the landmark. Thus, these four actions form a gradation of decreasing simplicity or increasing complexity.

That simpler concepts are in some sense more salient than more complex ones and are easier to grasp is evidenced in the relative order in which young children acquire concepts. For example, Clark and Garnica (1974) studied the acquisition of deictic verbs by asking children from ages six to nine to identify the speaker or the addressee of English utterances containing come, go, bring, and take. Come and go form a positive-negative pair. Come is positive because, for come, the speaker or addressee is at the goal or destination at the time of the utterance or at the time referred to in the utterance. So the conditions that have to be met for the use of this verb are all
positive in form. For go, the speaker is not at the destination at the time of the utterance and the condition that has to be met is therefore always negative. The causative forms of these two deictic verbs have to meet the same conditions: like come, bring is always positively specified with respect to the destination, and, like go, take is negatively specified. Furthermore, bring and take as a pair are conceptually more complex than come and go as a pair, because they are the causative forms of the latter.

The overall results of Clark and Garnica's study showed that 'children appear to acquire the meaning of come before go, and of bring before take', thus supporting the prediction that the positively specified verbs would be acquired before their negative counterparts. The children also made fewer errors overall on the pair come and go, compared with the semantically more complex causatives bring and take. This result is compatible with the hypothesis that semantically simpler terms are acquired before related, more complex terms' (1974:567-68). (cf. also Clark 1972, Clark 1974, Haviland and Clark 1974).

It is interesting to note that the same salience principle in terms of simplicity ultimately determines not only how the three simultaneous actions in the Chinese scene represented by (C4) are ordered but also how the four simultaneous actions in the English scene represented by (e1) are sequenced. In Chinese this salience gradation is translated into an imaginary-time order, and in English it is translated into a rank-order of verb-likeness so that verbs, adverbs, and prepositions are decreasingly verb-like. The imaginary-time order then operates to determine the linear order of words expressing the simultaneous actions in Chinese and likewise the verb-likeness rank-order is imposed on the words expressing the concurrent actions in English to determine their linear order.

Of significance is the fact that imaginary-time order and verb-likeness rank-order are both derived from the same salience rank-order pertaining to the simultaneous actions. If the salience rank-order principle is a universal perceptual strategy, then imaginary time-order principle is its localized form in Chinese and verb-likeness rank-order is its localized form in English. Physically simultaneous actions take place in an imaginary-time order in Chinese, but they occur as actions of different abstract categories in English.

The principle of imaginary-time order is an iconic principle of grammar and the verb-likeness rank-order is an abstract principle of grammar. But they are both based on the same salience principle in cognition. This explains
why a Chinese speaker and an English speaker can understand each other through translation, or can acquire each other's language as a second language without unsurmountable difficulties.

In a less dramatic but more pervasive way, the imaginary-time principle of sequencing is applied to a two-part act which is represented by a sequence of two verbs, traditionally called a resultative compound (RC). Let AB be such a sequence, then it is often said that A represents an action and B its result. Thus, we have, for example, shuāi pò (smash-break), 'to break by smashing,' chī bāo (eat-be full), 'to eat to full.' In some sense, the smashing causes the breaking and the eating causes the fullness. If A and B in the sequence AB represent a cause and its effect, respectively, then since cause precedes effect in real time, the sequence AB may be taken to exemplify Tai's principle of temporal sequence.

Closer examination, however, indicates that, although the time involved in scenes representing RC's is real, the action stage and the result stage do not emerge in a clear-cut sequence but have an overlap in time. Thus, if I cause a vase to break by smashing it, I am actually performing the act of smashing and breaking roughly simultaneously, not in any clearly perceptible time order. If I cause myself to become full through eating some food, I am actually eating and becoming full at the same time. It is true that I have to eat a certain amount in order to become full, but I may still be eating while I am already full. In both cases, there is an overlap in time between the action state and the emerging of the resultant state. Since the action begins to take place before the result begins to emerge, one can disregard their partial time overlap and treat them as discretely sequenced. Interestingly enough, real time is involved but imaginary order is delineated.

It would then seem that RC's confirm Tai's principle of temporary sequence but at the same time they show that language, in this case Chinese, can create an imaginary order in real time. Let us for convenience call this kind of time inferred time. Then Tai's principle of temporal sequence can be divided into three parts: (a) principle of real-time sequence, (b) principle of inferred-time sequence, and (c) principle of imaginary-time sequence. As philosophers are well aware of, real time is cognitively constructed. If real time is constructed, then so must be inferred time and imaginary time. This means that speakers of Chinese, through their language, construct three kinds of time and use them to structure their concepts. In other words, the Chinese language creates three kinds of time and uses them to structure realities in the world that it describes.
5. Competing Strategies

Iconicity as a basis for grammatical principles has its natural limitations, namely, certain relations do not easily allow for expressions in terms of such perceptual categories as time and space. Moreover, there must exist some abstract logico-mathematical principles that make linguistic coding and decoding manageably simple and effective. Ross’s (1967) island constraints, their underlying concept if not also their specific formulations, may be a good candidate for such an abstract principle, as Chomsky (e.g. 1980) has repeatedly suggested. Even though Chinese is dramatically more iconic than English, it must, due to the limitations of iconicity, rely on some abstract principles for making its grammar fully effective.

Until Tai became fascinated by the iconic nature of Chinese, he himself had been among those Chinese scholars who devoted themselves ardently to the pursuit of such abstract principles in Chinese grammar. Research conducted in this pursuit achieved a new height of sophistication and rigor, mainly with the emergence of C.-T. James Huang, who studied with Chomsky and whose contributions to Chomsky’s (1981) developing model of GB (Government and Binding) has been substantial. Huang showed that Chinese grammar is to some extent organized and constrained by a host of universal abstract principles, whose presence in English has been conspicuous. Not only that, but sometimes these principles can operate on a truly deep or abstract level of Chinese grammar.

Most insightfully and ingeniously, Huang (1981) showed that despite surface appearances to the contrary, Chinese, like English, operates with a WH Movement in its grammar. Unlike in English, where this rule operates in the technical component of Syntax, it operates on a deeper or more abstract component, namely, that of the Logical Form. Apart from its many theoretic implications, Huang’s discovery makes it perfectly clear that even in a considerably iconic language like Chinese, there have to be some abstract principles operating in its grammar. This discovery, I think, is the most important contribution that Huang has made to the study of Chinese as an iconic language.

Since iconically based and abstractly defined grammatical principles operate side by side in Chinese grammar, it is in theory possible for these two types of principles to get into conflict and to compete for their influence on any particular grammatical construction. The two competing strategies would then create a construction which is describable partially by an iconic
principle and partially by an abstract one. Since neither the iconic rule nor the abstract rule fully describes such a construction, it will constitute an exception, an anomaly, or in some way an unusual or even perplexing case, when it is viewed strictly as an abstract or iconic construction. It is reasonable to assume that languages evolve, change generally for the better, by developing more and more iconic imagery and also more and more general abstract organizational rules. Iconic imagery turns abstract concepts into concrete scenes, but the more abstract the concepts, the more complex the scenes become. These increasingly complex scenes then require increasingly complex rules for their description. But complex rules must be organized and stated in as general a way as possible and such generalization inevitably results in abstractness.

Viewed in this way, iconicity and abstractness in grammar are two complementary forces. As two complementary forces, they move each other forward, compete with each other, and balance each other to obtain an equilibrium in the grammar. But this ideal equilibrium is never achieved and languages constantly find themselves in cycles of alternately more iconic or more abstract structure.

If this speculation has some truth in it, then no linguist, no matter if his theory is iconically motivated or abstractly oriented or balanced between both, can write a grammar to exhaustively and completely describe a language, because as Jespersen aptly pointed out, language is always in a flux.

In a successful revolutionary movement against the 19th century neo-grammarians who erroneously suggested that phonological change is absolutely regular due to its strict phonetic nature, Wang (1969) and his associates (cf., Chen and Wang 1975) have proved with both cogent arguments and meticulously documented data that sound change can often be irregular because it takes time for a change to exert its incremental influence on members of the lexicon, that is, it proceeds by means of lexical diffusion. Since phonological changes take time to complete, two conflicting tendencies of change can compete with each other for influence on the same lexicon, and they are called competing changes by Wang.

In my opinion, no recent innovation in historical linguistics, in particular, and in language change, in general, is more originally insightful or seminal than Wang's bold concept of competing rules. As the most strict kind of linguistic rules, phonological rules are not supposed to engage in competition, or so the neo-grammarians would have wanted us to believe.
However, if phonological rules can and do compete, then nothing whatsoever is incapable of competing. Morphological rules, syntactic rules, semantic rules, and even pragmatic rules can compete. Since iconic principles and abstract principles are two opposing grammatical strategies, the competition of an iconic principle and an abstract principle in a grammar would have a repercussion that is far-reaching and that pervades every component of the grammar. This kind of competition, if it indeed exists, is just a natural consequence of the competition between two conflicting forces in language change, whose most concrete and visible forms are the competing phonological rules to which Wang first called our attention twenty years ago.

It seems that competition between an iconic principle and an abstract principle is real and that the best place to look for its examples is in syntax. An illustrative example may be the placement of the perfective aspect marker -le. In a most lucid and very comprehensive reference grammar on Chinese, where one finds frequent crystallized fine insights mixed with occasional coarse nascent ideas, Li and Thompson (1981) made the first attempt in recent years to give the placement of -le a systematic account. To string together the disparate array of syntactic facts about -le, Li and Thompson invented the idea of 'bounded.' The verbal aspect -le 'expresses perfectivity, that is, it indicates that an event is being viewed in its entirety or as a whole. An event is viewed in its entirety if it is bounded temporally, spatially, or conceptually' (1981:185). There are four ways in which an event can become bounded, and this is by being (a) a quantified event, (b) a definite or specific event, (c) an inherently bounded event, and (d) the first event in a sequence.

Sometimes an event can qualify as bounded according to one of these four parts of definition, but it is not bounded at all and it does not require or even permit -le. Li and Thompson’s way out is to interpret such anomalies as due to discourse factors. As they saw it, 'a sentence describing an event never occurs in a vacuum, but is always embedded in some larger conversation or discourse context,' and, therefore, 'whether a sentence expresses a bounded event depends to a great extent on the nature of the conversation of which that sentence is a part' (1981:201). Most would agree that this is a reasonable explanation. Mandarin is in some sense more discourse- or context-dependent than, for example, English. If Li and Thompson were discussing the placement of the past tense marker -ed in English, there would have been no need for them to invoke discourse factors as an explanation for any anomalies. Chinese is more iconic than English, and English is more abstract than Chinese, and this is one reason why Chinese has to depend more on discourse context for its grammatical distinctions.
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Whether Li and Thompson's boundedness is in itself sufficient to account for the various patterns of occurrence of -le, after interference of discourse factors are allowed, there is no lack of insight in that notion, and, moreover, no one seems to have offered a better alternative solution. This is perhaps one reason that led Huang (1988) to adopt Li and Thompson's view in his discussion of the placement of -le in connection with the exact phrase structure of a two-event sentence in Chinese such as tā páo de kuài, (he-run-DE-fast), 'he runs fast.'

Discourse factors may contribute substantially to create a messy picture for the placement of -le, as Li and Thompson has suggested. It is likely, however, that this messy picture is partly the result of a competition between the abstract principle of -le placement, somewhat along the line of Li and Thompson, and an iconic principle that is to be stated in terms of real, inferred, or imaginary time.

It is generally assumed by scholars in Chinese syntax that the perfective -le is placed right (1) after the verb if there is only one in the sentence, or (2) after the 'main' verb if there seem to be more than one verb. How do we know, in the case of (2), which one is the main verb? Well, the one that goes with -le is the main verb. This is indeed circular. Since the circularity involves the so-called main verb, it can affect our decision on what the phrase structure in Chinese is exactly like, and consequently how transformational rules or their equivalents are to be stated. Because of its far-reaching impact on the whole grammar of Chinese, the main verb must be non-circularly determined, once and for all, if possible.

This need is perhaps what prompted Huang (1988) to conduct one of the most sophisticated, rigorous, and thorough studies on the issue of the main verb in Chinese. Huang wanted to determine, for example, which one is the main verb in a sentence like wǒ (V1) páo de (V2) kuài, I-run-DE-fast. Is it the first verb (V1) or the second verb (V2)? If it is V1, then this sentence translates as I run fast, and if it is V2, then this sentence translates as I am fast in running. This question arises, because there are no clear cues, based for example on the finiteness of a verb, to tell us which is the verb. There are two competing approaches to this question in the literature. Huang referred to these two approaches as the Primary Predication hypothesis (PP) and the Secondary Predication hypothesis (SP), according to whether V2 is treated as the main verb (primary predicate), or as a subordinate verb (secondary predicate).
Huang argued in favor of SP and against PP. The essence of Huang's position is that V1 is the main verb no matter whether -le is attached to V1 or V2. This solution thus got rid of the -le-hence-main-verb circularity. However, now the circularity is transferred subtly to the idea of boundedness, which Li and Thompson originally suggested and which Huang inherited, with both its linguistic insight and its logical circularity. The circularity in the concept of boundedness is rather subtle.

According to Li and Thompson, '-le' is used when the event described by a sentence is perfective, which means that the event is bounded, and an event is bounded (1) if its temporal or spatial limits are specified, (2) if it signals a specific event and its direct object is definite, (3) if boundedness is inherent in the meaning of the verb of the sentence, or (4) if it is followed by another event (1981:201-2). There are two parts in this statement. The first part says that -le is used when the event is bounded, and the second part says that bounded events fall into four classes.

The circularity resides in the presumed connection between part one and part two. On the one hand we find sentences marked with -le, and on the other we notice that these sentences express events of four types. There need not be any connection between these two facts. Li and Thompson invented the concept of boundedness and linked the two facts together. This connection is where the logical circularity sniffs in: -le indicates that an event is bounded, and we know that the event is bounded because it belongs to one of the four classes of bounded events.

This circularity becomes obvious when an event that qualifies as bounded by one of Li and Thompson's four conditions does not take -le. Thus, for example, wǒ bā shǒubìǎo fāng (*-le) zài chōutílǐ, (I-BA-watch-put-at-drawer), 'I put the watch in the drawer' (cf. (83) in Li and Thompson 1981:206), is a bounded event because the locative phrase zài chōutílǐ specifies the spatial limits of the event of putting. But, to our dismay, -le cannot occur with fāng 'put.' Why so? Li and Thompson's answer is that the sentence contains another element that 'does the job of "perfectivizing" the verb' (1981:206). And what is that other element? It is precisely the locative phrase zài chōutílǐ 'in the drawer,' which by virtue of its bounding nature should have triggered a -le. If the job of perfectivizing is done, one cannot see it, since there is no -le placement, and so it is likely that no such job is done, and in that case Li and Thompson's definition breaks down. That the sentence is translated with a past tense in English does not show anything, since non-perfective verbs in Chinese also can be translated with a past tense in English,
as in qúnián ta tiāntian dà (*-le) qiū, (last-year-he-everyday-play-ball), 'he played ball everyday last year.'

When Huang borrowed the idea of boundedness from Li and Thompson, he inherited their fine insight and he also inherited their coarse logic. If, as Huang has argued, V1 is the main verb and V2 is the secondary predicate, then Huang's (3) tāmen kū de shōupāi dōu shì le, (they-cry-DE-handkerchief-also-wet-PA), 'they cried so much that even the handkerchief got wet,' should be ungrammatical and (3') *tāmen kū -le de shōupāi dōu shì should instead be grammatical. This is so because kū 'cry' as V1 is the main verb and should take -le.

Huang tried to get out of this trouble and argued in the circular manner of Li and Thompson by assuming an invisible perfectivization job. Thus, he said, 'as for the resultative constructions in 2-3, even though such constructions AS A WHOLE may denote bounded events, it is by virtue of the resultative complement denoted by V2 that they do so. That is, the resultative clause containing V2 does the job of 'perfectivizing' V1 (Li & Thompson 1981:206). The V1 in each case does not in itself denote a bounded event, and therefore does not take -le' (Huang 1988:293). Huang's sentence (3) does not automatically warrant a 'perfective' interpretation. We can say (3'') nǐmen míngtiān zuǐhǎo bié kū de shōupāi dōu shì le, (you-tomorrow-had better-notcry-DE-handkerchief-also-wet-ASP), 'tomorrow, you fellows had better not cry so much that even the handkerchiefs get wet.' No 'perfection' is detected in this sentence. Huang's difficulty is two-folded. If his (3) has a perfective interpretation, then the placement of -le with V2 rather than V1 contradicts his prediction. On the other hand, if (3) does not have a perfective interpretation, then neither the SP hypothesis which he argued for nor the PP hypothesis which he argued against can explain the mysterious occurrence of -le with V2 in his sentence (3) and similar other sentences.

Few would deny that Li and Thompson's idea of boundedness is a brilliant insight which ingeniously imposed a clean and neat order on the chaos involving the various patterns in which -le occurs. However, it is an insight that is flawed by logical circularity. Perhaps, Li and Thompson should not be blamed for this defect, since they inherited their problem from the kind of linguistic theory that assumes that only abstract rules operate in the grammar of a language. In the case of the Chinese -le, if no principles other than the abstract boundedness principle operate, then that is the only device we have for accounting for all the patterns of -le placement, including the patterns where -le manifestly does not seem to obey this abstract principle. Therefore, we try all we can to fix the principle and to state it in a subtly
circular way so that both the regular cases and the anomalous ones can be explained by it alone.

Instead of this kind of practice, one can find a reasonable solution by assuming that an iconic principle or a number of iconic principles operated to conflict this abstract boundedness rule and to result in what according to the abstract boundedness rule alone are anomalies. Assuming that there is an abstract rule for the placement of the perfective aspect marker -le, roughly along the line of Li and Thompson, then the debate between the PP hypothesis and the SP hypothesis is a debate between choosing V2 as the main verb to which -le is sometimes attached and choosing V1 as the main verb to which -le is at other times attached. Of course both approaches are based on a linguistic theory which assumes that all rules are abstract in the sense that they apply to formal syntactic structures rather than to iconically motivated patterns. If Mandarin Chinese is iconic and is moreover iconic precisely regarding how -le is placed, then both approaches are equally correct and equally incorrect. They are both correct in that the iconic principle favors placing -le sometimes after V2 as PP predicted or after V1 as SP predicted. However, they are both incorrect in assuming that -le occurs or has the potential to occur after the main verb (V2 or V1), without being subject to the interference of any iconic principle whose application may depend not on the main-verb status of a particular verb, but on the temporal order among the verbs.

Mandarin abounds in examples for which neither the PP hypothesis nor the SP hypothesis can give a satisfactory explanation. Consider, for example, the following examples:

(C15) 他走了进来。
tā zǒu le jìn lái
he-walk-PA-enter-come
'He walked into where I was.'

(C16) 他走进来了。
tā zǒu jìn lái le
he-walk-enter-come-PA
'He walked into where I was.'

(C17) *他走进了来。
*tā zǒu jìn le lái
he-walk-enter-PA-come
(C18) 他走进了厨房。
tā zǒu jìn le chūfāng
he-walk-enter-PA-kitchen
'He walked into the kitchen.'

(C19) 他走进厨房了。
tā zǒu jìn chūfāng le
he-walk-enter-kitchen-PA
'He walked into the kitchen.'

(C20) *他走了进厨房。
*tā zǒu le jìn chūfāng
he-walk-PA-enter-kitchen

(C21) 他走进了厨房来。
tā zǒu jìn le chūfāng lái
he-walk-enter-PA-kitchen-come
'He walked into the kitchen, where I was.'

(C22) 他走进厨房来了。
 tā zǒu jìn chūfāng lái le
he-walk-enter-kitchen-come-PA
'He walked into the kitchen, where I was.'

(C23) *他走了进厨房来。
*tā zǒu le jìn chūfāng lái
he-walk-PA-enter-kitchen-come

(C24) 他走了进来了。
 tā zǒu le jìn lái le
he-walk-PA-enter-come-PA
'He walked into where I was.'

(C25) 他走进了厨房了。
 tā zǒu jìn le chūfāng le
he-walk-enter-PA-kitchen-PA
'He walked into the kitchen.'

(C26) 他走进了厨房来了。
 tā zǒu jìn le chūfāng lái le
he-walk-enter-PA-kitchen-come-PA
'He walked into the kitchen, where I was.'
(C26a) 他走了进厨房来了。
   * tā zǒu le jìn chūfáng lái le
   he-walk-PA-enter-kitchen-come-PA

(26b) 他走了进了厨房来。
   * tā zǒu le jìn le chūfáng lái
   he-walk-PA-enter-PA-kitchen-come

(C27) 他走。
   tā zǒu
   he-walk
   'He will walk.'

(C28) 他进来。
   tā jìn lái
   he-enter-come
   'He will enter.'

(C29) 他走进。
   * tā zǒu jìn
   he-walk-enter

(C30) 他走了厨房。
   * tā zǒu le chūfáng
   he-walk-PA-kitchen

(C31) 他进了厨房。
   tā jìn le chūfáng
   he-enter-PA-kitchen
   'He entered the kitchen.'

(C32) 他穿了衣服拿了钱出去了。
   tā chūān le yīfú nà le qián chū qù le
   he-put on-PA-clothes-take-PA-money-exit-go-PA
   'He got dressed, took the money, and went out.'

(C33) 他摔破了花瓶。
   tā shuāi pò le huāpíng
   he-smash-break-PA-vase
   'He smashed the vase into pieces.'
(C34) 他摔破了花瓶了。
    tā shuāi pò le huāpíng le
    he-smash-break-PA-vase-PA
    'He smashed the vase into pieces.'

(C35) *他摔了破花瓶。
    *tā shuāi le pò huāpíng
    he-smash-PA-break-vase

(C36) *他摔了破花瓶了。
    *tā shuāi le pò huāpíng le
    he-smash-PA-break-vase-PA

(C37) 他吃饱了。
    tā chī bǎo le
    he-eat-full-PA
    'He ate until he was full.'

(C38) 他吃得很饱。
    tā chī le hěn bǎo
    he-eat-PA-very-full
    'He became very full through eating.'

(C39) 他走进来了厨房了。
    tā zǒu jìn lái le chūfáng le
    he-walk-enter-come-PA-kitchen-PA
    'he walked into the kitchen, where I was.'

(C40) *他走进来了来了。
    *tā zǒu jìn le lái le
    he-walk-enter-PA-come-PA

(C41) *他走了进了来了。
    *tā zǒu le jìn le lái le
    he-walk-PA-enter-PA-come-PA

Whatever form the rule of -le placement eventually takes, it must attach -le to the so-called main verb, regardless of whether this main verb is equated with V1 or V2. Thus, this rule as an abstract rule refers to the grammatical categories of main-verb and non-main-verb for conditions of its application. Given a sequence of V1 and V2, once we decide that one of them is the main verb and the other is the non-main verb, we cannot change
our minds any more. Although V1 and V2 as two events may be temporally sequenced, the information about their temporal sequence is lost once we commit ourselves to a categorial approach by selecting one of them as the main verb and the other as the non-main verb. Therefore, the abstract rule of replacement cannot technically apply to a sequence of verbs viewed as events unfolding in a time order. If the iconic view is not just a replica of the grammatical view but may contradict it, then we must state the iconic view separately by using an iconic principle which explicitly refers to events sequenced in time.

An iconic principle of this kind depend on the concept of segmentation for its formulation. If we are given a sequence of three elements, A, B, and C, we may group these elements together in a number of ways without changing their initial order. That is, we can divide this sequence into subsequences. We may treat them as (1) an undivided whole, (ABC), or (2) a sequence of one element followed by a sequence of two elements, (A)(BC), or (3) a sequence of two elements followed by a sequence of one element, (AB)(C), or (4) a sequence of one element followed by a sequence of one element, which is in turn followed by a sequence of one element, (A)(B)(C). Thus, there are four alternative ways of analyzing a sequence of three elements into subsequences. In the concrete case where the elements are events, we have four alternative ways of analyzing a sequence of three events into subsequences of events. Let us call any subsequence within a sequence a segment. Then analysis (1) yields the segment (ABC), analysis (2) yields the segments (A)(BC), analysis (3) yields the segments (AB)(C), and analysis (4) yields the segments (A)(B)(C). Three events in a temporal sequence, when treated as three elements in a sequence, can be similarly understood to have these four alternative interpretations.

Let us now assign an extraneous element x to each one of these four patterns by attaching it to the right of a segment. For analysis (1) there is only one possibility: (1) (ABC)x. For analysis (2), there are two possibilities: (2)(a) (A)(x)(BC), (2)(b) (A)(BC)x. For analysis (3), there are also two possibilities: (3)(a) (AB)(x)(C), (3)(b) (AB)(C)x. For analysis (4) there are three possibilities: (4)(a) (A)(x)(B)(C), (4)(b) (A)(B)(x)(C), (4)(c) (A)(B)(C)x. There are altogether six patterns. We now destroy the information about segmenting and simply represent each pattern as an unassembled sequence of four elements, namely, A, B, C, and x. Then, we have type (i) AxBC, which is a result of collapsing patterns (2)(a) (A)(x)(BC) and (4)(a) (A)(B)(C); type (ii) ABxC, which is a result of collapsing patterns (3)(a) (AB)(x)(C) and (4)(b) (A)(B)(x)(C); and type (iii) ABCx, which is a result of collapsing patterns (1) (ABC)x and (4)(c) (A)(B)(C)x. Given each one of these three types, one cannot uniquely reconstruct its exact
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pattern, because the information needed for the reconstruction is erased. But we know that type (i) is either pattern (2)(a) or (4)(a); type (ii) is either pattern (3)(a) or (4)(b); and type (iii) is either pattern (1) or (4)(c).

Now take A, B, C to be verbs representing three events, and x to be the perfective aspect marker -le, then suddenly the complex picture of -le placement becomes rather simple. There is an iconic principle based on real, inferred, or imaginary time sequence that places -le as an aspect marker to the right of a segment indicating an event or a combination of events within a temporal sequence. There are six ways of doing this placement of -le in accordance with the six patterns: (1), (2)(a), (2)(b), (3)(a), (3)(b), (4)(a), (4)(b), and (4)(c). After the segmenting information is erased, these six patterns are reduced to three types and we have type (i) A-le-B-C, type (ii) A-B-le-C, and type (iii) A-B-C-le. And these are exactly the three possible patterns of -le placement we observed in those examples among (C1)-(C41) which contain only one copy of -le. (Those sentences where -le occurs twice, as in (C26), will require an additional explanation to be discussed later.)

These three types constitute the total number of possibilities for the single placement of -le among A, B, and C. In reality, a particular combination of events chooses only one or two of these types and rarely all three of them. This is because only a correspondingly small number of possible segmentation patterns are selected from all six possible patterns. A few examples should illustrate. For example, let zōu 'walk,' jìn 'enter,' lái 'come' be A, B, and C. We see that type (i) A-le-B-C is selected in (C15) ta zōu le jìn lái, type (iii) A-B-C-le is selected in (C16) ta zōu jìn lái le, but type (ii) is excluded so that it is ungrammatical to say (C17) *ta zōu jìn le lái.

Sometimes, it is possible to reconstruct the exact pattern from the type, as in this particular case. We know that we can say (C27) and (C28), but not (C29). Thus, if these sentences are any indication, then the sequence zōu jìn lái has the segmentation (A)(BC), which leads to the pattern (2)(a) (A)x(BC) and pattern (2)(b) (A)(BC)x. Pattern (2)(a) is realized in (C15) and pattern (2)(b) is realized in (C16). Being the realization of neither (2)(a) nor (2)(b), sentence (C17) is ungrammatical. Reconstruction of this kind is never easy or straightforward because once erased, an information is lost forever, unless its copy is stored somewhere else in the grammar. And one should not always expect to be able to decide on the exact pattern from which any one of the -le-affixed sequence type is derived.

Let us now look at another example. Although (C29) is ungrammatical, it can be improved by adding a noun phrase indicating a goal, as in (C18)-
(C20). These three sentences will be grammatical if the -le is correctly placed as in (C18) and (C19), but ungrammatical otherwise as in (C20). Here, instead of a sequence of A, B, and C as three events, we have only a sequence of A and B as two events. Given the sequence AB, there are only two possible segmentations: (AB) and (A)(B). If they both were chosen, then we would have ABx, AxB. In actuality, as far as zōu jīn is concerned, only the type ABx is allowed. Therefore only sentences (C18) and (C19) are grammatical, not (C20). That -le in (C19) follows the goal-denoting noun chūfāng 'kitchen' can be accounted for by an abstract rule of -le-hopping whose exact formulation need not concern us here. Here one can only speculate on why (AB) rather than (A)(B) is selected. As the contrast between (C30)* and (C31) shows, zōu does not take a goal noun-phrase, but jīn does. Thus, zōu must in some sense be parasitic on jīn, in the construction zōu jīn chūfāng. Whether or not this speculation is reasonable, zōu jīn here is segmented as (AB) and so -le can intervene between A and B to result in a sentence like (C20)*.

Let us now look at a more complex situation, where the sequence zōu jīn lái as a transitive verb takes a goal noun-phrase such as chūfāng. As sentences (C21)-(C23) indicate, -le can occur right after zōu jīn or right after lái, but cannot intervene between zōu and jīn. The sequence zōu jīn lái, whether intervened by -le or not, cannot occur with full grammaticality before the goal noun phrase chūfāng as shown in the sentences (C4)-(C7). In a slightly different but parallel sequence such as zōu chū qū, (walk-exit-out) 'walk out of,' the same is still true, as evidenced in sentences (C12)-(C14). The ungrammaticality is caused by an abstract rule which specifies that lái, as the last element of the sequence zōu jīn lái, must move to follow the goal noun-phrase chūfāng. If this rule indeed refers to lái viewed as the last element rather than the last segment of the sequence zōu jīn lái then whether it applies after the segmentation or before it is not critical. However, it is also possible that this rule refers to lái not just as the last element but as the last segment in the sequence (zōu jīn) (lái). In that case, this rule must follow the segmentation. This question is not of our central concern and we will not pursue it here.

As sentences (C21)-(C23) indicate, zōu jīn lái has the segmentation form (AB)(C), namely, it is (zōu jīn) (lái). The aspect marker -le can be placed either right after the first segment or right after the second segment, but not in a position between A and B, which form an indivisible segment.

Notice that given the same sequence of events in a particular scene, that is, given the same sequence of verbs in a particular grammatical construction, there is a unique segmentation form for this sequence. Thus, in sentences (C15)-(C17), the sequence zōu jīn lái has the unique segmentation form...
As a result of attaching x to the segment (A), we obtain AxBC, and as a result of attaching x to the segment (BC), we obtain ABCx. Zōu le jin lái in (C15) has the type AxBC and zōu jin lái le in (C16) has the type ABCx. In sentences (C21)-(C23), however, the same sequence of zōu jin lái has the different segmentation (AB)(C), which led to two patterns of x-attachment, namely, ABx(C) and ABCx. The first is realized as zōu jin le (chūfāng) lái in (C21) and the second is realized as zōu jin (chūfāng) lái le in (C22).

Given a sequence of verbs, once its segmentation form is determined, -le can occur once in only one of the possible sites of -le placement. This seems an effective way of using the information created by the segmentation. The other way would be to place a -le at not just one chosen site but each possible site of the -le placement. This would lead to a loss of the distinction between two alternative patterns of segmentation so that, for example, AxBC and ABx(C) will both end up as ABCx. That is, instead of zōu le jin lái and zōu jin lái le, we would have zōu le jin lái le indiscriminately. It is true that zōu le jin lái le, as evidenced in sentence (C24), is grammatical. But there is strong reason for believing that this form is not created by the method of placing -le at each possible site of -le placement. For, if this method of multiple placement of -le were really in operation, we would expect that something like (C41) *tā zōu le jin le lái le is grammatical rather than ungrammatical as it actually is. Generally, given the sequence ABC, there is no a priori reason against segmenting it into (A)(B)(C). Since it can be segmented into (A)(B)(C), if multiple placement of -le were in fact operative, then we would expect to find the type Ax(B)x(C) realized by some sequences of verbs. However, Ax(B)x(C) is totally forbidden and we have for example no such sequence as *zōu le jin le lái le.

If the placement of -le is not a multiple-site placement but is a choice-site placement, then a sequence like zōu le jin lái le becomes an extremely interesting phenomenon. The iconic principle of -le placement can only allow one -le to be placed at a choice site based on segmentation. The abstract rule of -le placement, similarly, can only place one -le to the right of the main verb, whether the main verb is identified with V1 as assumed in the SP hypothesis or with V2 as assumed in the PP hypothesis. Neither the iconic rule of choice placement based on segmentation nor the abstract rule of choice placement determined by the main verb can adequately explain this pervasive anomaly of double occurrence of -le. This is an anomaly not in the sense that it is ungrammatical, but in the sense that it is grammatical but neither the iconic formulation nor the abstract formulation of -le placement can explain it adequately.
It is true that multiple occurrence of -le is possible if the sentence expresses a number of events sequenced not in imaginary time but in real time. Thus, (C32) expresses a sequence of three events ordered in real time, and so as many as three copies of -le occur there. One could suggest, against any reasonable intuition, that *zōu jīn lái is a real-time sequence of events not an imaginary-time sequence. But, if that were the case, then *zōu le jīn le lái le would have been grammatical, just like zōu le jīn lái le, rather than ungrammatical, which it really is. No matter how hard one may try, there is no reasonable way in which, by resorting to the abstract rule alone or to the iconic principle alone, one can explain the double occurrence of -le in a grammatical sentence like (C24) tā zōule jīn lái le.

Of course, we could make the capricious decision, whether as a writer of abstract rules or as one of iconic rules, that at most two copies but no more than two copies of -le can occur in a sentence expressing a sequence of events ordered in imaginary time. This kind of output condition may eliminate as ungrammatical all imaginary-time sentences with three copies of -le.

But they both left unanswered the question of how one places the maximally allowed two copies of -le. In the abstract approach, the first copy of -le would be placed with the V1 or V2, taken as the main verb, and the second copy would be placed with V2 or V1, respectively. However, V1 or V2 may in turn be a sequence of two verbs. In that case, the rule becomes indeterminate and breaks down, unless one arbitrarily picks one of them as the exact site of -le placement. For example, as (C26), (C26a), and (C26b) show, -le cannot intervene between zōu and jīn in the sequence zōu jīn lái goal. But the rule as stated cannot prevent this intervention. In the iconic approach, this output condition would have the effect of ruling out the segmentation pattern (A)(B)(C), and so any sequence will nowcontain at most two segments. Now we make the -le placement work alternatively either as a multiple-site placement just where one expects two copies of -le, or as a choice-site placement just where one expects one copy of -le. If a sequence allows for only one option, then only one of these two modes of placement operates. If it allows for both, then both modes operate, disjointly. Thus, for example, zōu jīn lái in (C15)-(C17) will have the segmentation (zōu) (jīn lái). Choice-site placement will put -le right after zōu to result in zōu le jīn lái, but multiple-site placement will put one -le right after (zōu) and another -le right after (jīn lái), and the result will be zōu le jīn lái le.

Although both the abstract approach and the iconic approach can manage to come up with an explanation for the double occurrence of -le,
this is done in an ad hoc manner mainly through an output condition which label all sentences with triple occurrence of -le as ungrammatical. Besides this, the abstract mechanism will break down if V1 (or V2) is itself a sequence of two elements. With the iconic approach, -le-placement has to assume two alternative modes, namely, choice-site placement or multiple-site placement. Neither of these two approaches are sufficiently economical or natural. This is perhaps because the true solution is to be sought not through an exclusively abstract or exclusively iconic mechanism, but through a joint operation of both of them.

In this joint operation, abstract rules and iconic rules will interact either adequately to result in grammatical sentences or inadequately to result in ungrammatical ones. Adequacy ensues if each rule applies in the exact way it is supposed and at the exact juncture at which it is required to apply. Otherwise, inadequacy ensues. This concept of adequacy or inadequacy is exactly the same concept as the correct or incorrect grammatical derivation in a transformational grammar, except that, in our case, rules are of two kinds: abstract and iconic.

To be specific, there is the Abstract Rule (AR) which states that, given a sequence of three (or two) verbs, one must place a copy of -le to the right of any verb to indicate perfectivity. The Iconic Rule (IR) has two parts. IR(i) states that if a -le is placed by AR in such a way that it intervenes between two elements in a segment, then one must first (a) place a copy of -le as an extraneous element outside of the sequence, and then (b) erase the original -le placed by AR. IR(ii), which follows IR(i), states that one must place a new copy of -le to the right of the first segment in the sequence.

Technically, we have the following rules:

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{ V1, -le, V2, V3 }

AR. V1, V2, V3 + -le = = > { V1, V2, -le, V3 }

{ V1, V2, V3, -le }

where 'X, Y' means 'X is followed by Y.'
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IR(i).

(a) A(X, -le, Y)B = = > A(X, -le, Y)B + -le,
(b) $A(X, -le, Y)B + -le = = > A(X, Y)B + -le$,

where (...) is a segment, and $X$ and $Y$ are both elements or one of them is composed of two elements, and $A$ and $B$ are possibly empty segments.

IR(ii). $+ (A)(B)(C) + = = > + (A) -le (B)(C) +$,

where $+ (A)(B)(C) +$ is a sequence not containing $-le$; and $(B)$ and $(C)$ may both be empty. 4

Notice that AR refers to $V1, V2, V3$ as a sequence without any segmentation structure, but IR refers to them as a sequence with a segmentation structure. For this reason, the rule input for IR is more specific than that for AR. Therefore, in order for AR and IR to jointly apply to the same input, that input must be the more specific one, namely, a sequence with a segmentation structure. For otherwise, only AR can apply but not also IR. When AR applies, it will look at $V1, V2, V3$ just as an unsegmented sequence and disregard its segmentation structure. When IR applies, it will consider the segmentation structure.

Notice also that the condition for IR(i) to apply (non-vacuously) to the output of AR is when that output contains a portion which is some $(X, -le, Y)$. Otherwise, IR(i) does not apply; that is, it applies vacuously. Since IR(i) applies (non-vacuously) only to a sequence containing an intervened segment, the patterns of input for the joint operation of AR and IR rules are precisely those patterns where AR alone applies or where AR applies, followed by IR. IR cannot apply alone, since it depends on the output of AR for its own input.

This does not mean that IR as a rule is dependent on AR for its function. If AR did not exist, then IR would have only its part (ii), which simply places a $-le$ to the right of the first segment of a sequence. Since AR disregards the segmentation structure, it may sometimes place a $-le$ to intervene between two elements in a segment. This distorts a segmentation pattern, and IR(i) remedies this distortion by moving the intervening $-le$ to a position to the right and outside of the sequence. With this adjustment made, IR(ii) now can apply to the sequence as a segmentation pattern to place $-le$ to the right of its first segment. Not only is IR not parasitic or dependent on AR, it is actually more powerful than AR in the sense that it can effect a change on the result of AR but AR cannot effect any change on its result. This asymmetrical dominance relation may reflect the paramountly important fact that Chinese is more iconic than abstract, especially in this part of its grammar.
It is easy to see that it takes only a very few steps in historical change in Mandarin to result in AR and IR being the same. As a first step, AR may begin to restrict its application to only the so-called main verb. Since segmentation and main-verb status are both largely based on meaning, it is likely for the main-verb to coincide with one of the segments. If so, that segment need not be the first segment, to which IR(ii) refers, but can be any segment, depending on the type of the sequence in question. But if that segment is the first segment, then it constitutes a context in which IR(ii) as a special case of AR can apply to place a -le to its right. Thus, AR can become a rule which states that, to indicate perfectivity, one must attach a -le to the main-verb segment. As a result, IR(i) will become irrelevant and IR is reduced to merely IR(ii). So modified, AR and IR become one and the same rule just in cases where the main-verb segment is also the first segment. If the main-verb segment is not the first, but is the second or the third segment, then AR and IR are in conflict.

One way in which the conflict can be resolved is for AR and IR to become identical. For example, in connection with AR, one can define main verb simply as the first segment, then AR and IR become one and the same rule. If this situation actually obtains, then it would constitute an example of how an abstract rule and an iconic rule can start out as two competing forces and eventually be compromised into a single force, which is partially iconic and partially abstract. When that happens, the so-called grammatical sentences are simply those sentences that meet the compromised standard, and the so-called ungrammatical sentences are those that meet only the abstract standard or only the iconic standard. Thus, in a roughly Darwinian sense, sentences can survive in a language by trying to adjust to emerging new and often conflicting forces. If a sentence succeeds, it is grammatical, and if it fails, it is ungrammatical.

In this connection, it may be worth pointing out that the 19th century neo-grammarians misunderstood or at least misapplied Darwin's doctrine to the study of language, when they assumed that sound change is strictly regular. To assume that sound change is regular is tantamount to assuming that every individual in a species survives in an altered form. This cannot be true if Darwin is correct, since, according to Darwin, only those individuals better adapted to their ecological niches will survive. A sound system, just like any other part of a grammar, is constantly being affected by competing changes in the sense of Wang and his associates. Due to the competition, two types of reflexes from earlier (forms of) morphemes are possible: regular and irregular reflexes. If the two competing changes cannot be compromised and one is much more dominant and the other is much less dominant, then those
reflexes meeting the demand of the more dominant change will seem regular and those reflexes meeting the demand of the less dominant change will seem irregular. If a compromise can be reached, however, then regularity and irregularity in reflexes are defined according to this compromise. Reflexes are regular if they are derived from those morphemes that meet the compromised demand; and reflexes are irregular if they are derived from those morphemes that meet the demand of only one but not both of the two conflicting changes.

If new changes which may be mutually competing are constantly affecting a system, we would expect irregular reflexes to be common rather than rare, contrary to the prediction of the neo-grammarians. And this is indeed the case, as Wang and his associates have convincingly proven with their research results in the past twenty years. Viewed this way, Wang's idea of competing sound changes is truly revolutionary, and it is so precisely because it is authentically Darwinian, which is what the neo-grammarians set out to be without success.

Returning to the competition between AR and IR, we notice that its result is that sentences which meet the joint requirement of both AR and IR are grammatical, and all others are ungrammatical. And this is easily verified by looking at Table I, where we show the derivations of all seven possible patterns [(1)-(7)] of competition involving a three-verb sequence. Also shown are the three possible patterns [(8)-(10)] involving a two-verb resultative compound which, though its elements are sequenced in inferred time and not in imaginary time, is also subject to the same explanation in terms of AR and IR. Since the joint operation of AR and IR has applied to the initial input forms of these patterns [in column (I)], their final output forms [in column (IV)] should all be grammatical. And they are, with the exception of patterns (3) and (4), which are only attested in semi-grammatical sentences such as (39), as indicated in column (V). Thus, the ten patterns in column (IV) are all grammatical [with patterns (3) and (4) being semi-grammatical], and all other patterns are ungrammatical.

As an example for illustration, consider the pattern (A)(BC) in column (I), Table I. AR applied to it to insert a -le, symbolized by y, between B and C, resulting in (A)(ByC) in column (II). IR(i)(a) applied to (A)(ByC) to change it into (A)(ByC) + y, and IR(i)(b) applied to delete the intervening y to result in (A)(BC) + y, as shown in column (III). IR(i)(a) and IR(i)(b) are separate, but to save space, we have presented them as simply IR(i) in Table I. Now, we apply IR(ii) to (A)(BC) + y to place a -le, this time represented by x, to the right of its first segment, namely, (A), and the result is (A)x(BC) + y as shown in
column (IV). This pattern is exemplified in column (V) by (C24), previously cited, tā zōu le jīn lāi lē 'he walked into where I was.'

Now, suppose that, instead of applying rules correctly in this way to pattern (I), (A)(BC), we apply only AR, then we would get only the pattern (A)(ByC), which will result in an ungrammatical sentence like (C17) * tā zōu jīn le lāi. Now, suppose that our mistake is slightly different and that we apply AR, IR(i) and stop, then we would end up with the incorrect pattern (A)(ByC) + y, exemplified by the ungrammatical sentence (C40) * tāzōujinlelāile.

It is clear that by assuming an interaction of AR and IR in the explicit and specific form that we have given it in terms of the ordered set of rules AR, IR(i)(a), IR(i)(b), and IR(ii), we have achieved a simple and natural explanation for the grammatical as well as ungrammatical sentences involving the placement of -le. Therefore, as this particular case shows, interaction between an abstract principle and an iconic principle can, in general, take place in a language to create grammatical sentences which conform to the joint requirement of both principles or to create ungrammatical sentences which do not conform to this joint demand.

6. Conclusion

We have in the above attempted to show that, contrary to popular belief, Whorfian hypothesis is not circular. Although a linguistic expression per se need not be a reflection of some thought or reality, it can and must be such a reflection, if it is iconically motivated and constitutes an image through which speakers of a particular language understand a reality in their world. When a language creates a reality with such an iconic expression, then that expression describes a relative reality, apart from which there is no such a thing as absolute reality, as Quine has repeatedly urged in a different context.

Through the invention of real, inferred and imaginary times, the Chinese language has at its disposal a very powerful set of iconic principles based on temporal sequencing of events, which may or may not occur in a sequence in real time, but which are treated as if they do so occur. Real time is a common invention among possibly all speech communities, but inferred and imaginary times are the ingenious inventions of the speakers of Chinese. Such inventions are among the strongest kinds of evidence, consistent with Whorf's hypothesis, that a language can create its own ontology and, therefore, linguistic expressions across various languages for the supposedly universal facts or thoughts are really not just conventional labels but may reflect the
structure of the facts or thoughts, as these are understood by the speakers of each particular language.

<table>
<thead>
<tr>
<th>(I)</th>
<th>(II)</th>
<th>(III)</th>
<th>(IV)</th>
<th>(V)</th>
</tr>
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<tbody>
<tr>
<td>Input</td>
<td>AR applied: IR(i) applied:</td>
<td>IR(ii) applied:</td>
<td>Example</td>
<td></td>
</tr>
<tr>
<td>(1) (A)(BC)</td>
<td>(A)(ByC)</td>
<td>(A)(BC) + y</td>
<td>(A) x (BC) + y</td>
<td>(C24)</td>
</tr>
<tr>
<td>(2) (AB)(C)</td>
<td>(AyB)(C)</td>
<td>(AB)(C) + y</td>
<td>(AB) x (C) + y</td>
<td>(C26)</td>
</tr>
<tr>
<td>(3) (ABC)</td>
<td>(AyBC)</td>
<td>(ABC) + y</td>
<td>(ABC)x + y</td>
<td>(C39)?</td>
</tr>
<tr>
<td>(4) (ABC)</td>
<td>(AByC)</td>
<td>(ABC) + y</td>
<td>(ABC)x + y</td>
<td>(C39)?</td>
</tr>
<tr>
<td>(5) (A)(B)(C)</td>
<td>(A)x(B)(C)</td>
<td>(A)x(B)(C)</td>
<td>(A)x(B)(C)</td>
<td>(C15)</td>
</tr>
<tr>
<td>(6) (A)(B)(C)</td>
<td>(A)(B)x(C)</td>
<td>(A)(B)x(C)</td>
<td>(A)(B)x(C)</td>
<td>(C21)</td>
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<tr>
<td>(7) (A)(B)(C)</td>
<td>(A)(B)(C)x</td>
<td>(A)(B)(C)x</td>
<td>(A)(B)(C)x</td>
<td>(C16)</td>
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<tr>
<td>(8) (AB)</td>
<td>(AyB)</td>
<td>(AB) + y</td>
<td>(AB)x + y</td>
<td>(C34)</td>
</tr>
<tr>
<td>(9) (A)(B)</td>
<td>(A) x (B)</td>
<td>(A) x (B)</td>
<td>(A) x (B)</td>
<td>(C38)</td>
</tr>
<tr>
<td>(10) (A)(B)</td>
<td>(A)(B)x</td>
<td>(A)(B)x</td>
<td>(A)(B)x</td>
<td>(C33)</td>
</tr>
</tbody>
</table>
NOTES

1. See Hsieh 1988 for a similar attempt to compromise.

2. When -le occurs at the end of a sentence, such as in (C14), it may have an inchoative interpretation, or even express what Li and Thompson (1981) called a 'currently relevant state.' We disregard such additional interpretations.

3. See Li and Thompson 1981 for an illuminating discussion of this type of compounds

4. Rules apply in the order specified, namely AR < IR(i)(a) < IR(i)(b) < IR(ii). The formulation of these rules makes it non-crucial whether they apply cyclically or not.

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The Structural Meaning of *Ba* and *Bei*
Constructions in Mandarin Chinese:
Do They Really Mean *Disposal* and *Passive*?

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0. Abstract.

Lots of research have been conducted on the syntactic structure and
historical development of both the so-called 'disposal' *ba* construction and
the so-called 'passive' *bei* construction, while their semantic characteristics
have not yet been properly and clearly defined. This paper chooses to argue
that the ultimate test for any syntactic specification is whether it can properly
reflect the unique semantic characteristics of all the linguistic forms which
that specification intends to cover. It tries to redefine the two constructions
and concludes that they represent two special formulas which can be
respectively abstracted as 'A ba B + C' and 'A bei B + C' where A and B stand
for two nominal expressions, while C must always be a descriptive statement.
The semantic implication of the *ba* construction is thus defined as 'B turns out
to be what C describes in connection to A' (instead of how A disposes B), while
that of the *bei* construction is defined as 'A turns out to be what C describes in
connection to B' (instead of how A is ---ed [disposed?] by B). Therefore,
contrary to what most scholars seem to believe, they are not, upon closer
scrutiny, 'disposal' or 'passive' constructions in Chinese syntax. It is believed
that, when these rather unique semantic characteristics of the two
constructions are properly understood, both syntactic specification and
pedagogical explanation for them will make better sense.

1. Introduction.

Both *ba* (把) and *bei* (被) are among the most commonly used particles in
Mandarin Chinese, and they help to form two rather unique constructions
which have been topics of numerous research by modern scholars of Chinese
linguistics (see the References for examples). While previous studies have
contributed quite a bit to our understanding of both the syntactic structure
and the historical development of these constructions, the semantic
characteristics have, however (or it seems to me), not yet been properly and
clearly understood and defined, and, as a consequence, many of the
conclusions of the previous studies about the structure and the origin of these constructions seem to be rather questionable. In this paper, a completely different theoretical point of view will be adopted, so as to redefine the semantic characteristics of these two constructions. It is my belief that only after their semantic characteristics have been properly defined can syntactic specification, as well as pedagogical explanation, for these constructions be well grounded and make better sense. The redefinition is based upon some of my more general and fundamental convictions about linguistic studies, which can be briefly stated as follows.

1.1. The Limitation of Linguistic Systems.

Linguistic systems are arbitrary and subjective products of the human mind when it tries to represent the external world. Speakers of different languages use different systems for their representation of the outside world, and these systems all have their own intrinsic logic and can thus be specified or formulated. However, these systems are never completely and absolutely sufficient to represent the external entities which they are supposed to represent. Thus, speakers of any particular language always tend to subconsciously interpret all kinds of natural sounds according to the phonemic system of that language. Similarly, they also tend to subconsciously classify or categorize all objects and events according to its lexical system. But the reality of the world rarely coincides perfectly with the linguistic systems designed to represent it. Therefore, on any level of linguistic representation, there are likely to be some things which the linguistic systems cannot fully explain. Such is the limitation of linguistic systems.

1.2. The Goal of Linguistic Studies.

If what we said above is correct, it follows that we may set different goals for our linguistic studies. On the one hand, we may choose to work within the limits of the linguistic systems themselves, i.e., to discover and specify the intrinsic logic and structure of the unique linguistic systems of a natural language. This will give us a chance to establish highly abstract and yet strictly formalistic rules as a way to define those systems and explain the native speakers' intuition, which are actually one and same thing. On the other hand, we may want to go beyond the limits of those systems by trying to depict the interactions between those systems and the external world, i.e., how those systems actually function under the physical, cultural, social, and/or situational conditions. This will lead us to pragmatics and functionalism. Indeed, to understand why a certain linguistic expression is chosen rather than another for a certain occasion, or why a certain expression loses its normal
literal denotation and acquires instead a particular connotation under a certain condition, only pragmatics can help us. We may, and perhaps should, try to make our research on pragmatics as formalistic as possible, but in all likelihood, it will probably yield only a certain pattern of general tendencies, rather than strict rules, because formulation or formalization is perhaps possible only within a linguistic system, not in its relationship with its corresponding external entities.

1.3. Strict Formalization and Pragmatic Explanation

One corollary of the above discussion should be clear. While strict formalization is an ideal or necessary way to define the linguistic system as a reflection of the native speakers' intuition, it is by nature rather restricted in its capacity to explain all the actual usages of linguistic expressions in the real world. For that purpose, we have to appeal to pragmatics. On the other hand, even with many proper and specific restrictions, formulation is still likely to allow (or generate) many linguistic expressions which may never be actually used, i.e., allowing expressions which some people may call ungrammatical, because they 'do not speak (or have never heard of) them.' My view is that this should not be considered a defect of formalization, if we have reasons to believe that the 'unheard-of' expressions allowed by such formalization definitely have a much higher degree of acceptability (or grammaticality) than those not allowed by the formalization.

1.4. The Scope of the Present Study

The goal of the present study is rather limited in nature. It merely seeks to reveal the semantic characteristics of ba and bei constructions, without trying to go into discussion on the details of their syntactic structures or the pragmatic aspects in the actual use of sentences formed according to these constructions. It is, however, strongly suggested that the unique semantic characteristics of these constructions should be the primary justification or foundation for the specification of their syntactic structure. Otherwise, such specification will be little more than some interesting but artificial games, no matter how neat or 'productive' they might be.

2. A Summary of the Conclusions of Previous Studies.

Though both have been popular research topics for modern scholars of Chinese linguistics, the ba construction has received more attention than the bei construction, perhaps because of its more peculiar nature, in that similar constructions are rarely seen in other languages, while the latter can be, and
has been, equated to 'passive voice' in most European languages. The basic structure of the two constructions can be abstracted into the following formulas respectively:

\[
\begin{align*}
A & \quad ba & B + C \\
A & \quad bei & B + C
\end{align*}
\]

In these formulas, both A and B stand for a nominal expression, while C serves as the predicate (mostly a verb phrase [VP], but not necessarily so) of the sentence. On the basis of these formulas, the conclusions of previous studies on the ba construction can be summarized as follows:

1) There are several different kinds of ba sentences with different meanings.
2) A disposes B by a certain action.
3) The 'action verb' in C is the main verb.
4) A is the subject and agent of that 'verb.'
5) B is the preposed object and patient of that 'verb.'
6) B is a definite (or specific, generic, etc.) noun.

Similarly, their conclusions on the bei construction can also be summarized like the following:

1) There are also different kinds of bei sentences, most are passive, but some may not be.
2) A is ...ed (disposed ?) by B in some way.
3) The 'action verb' in C is the main verb.
4) A is the subject of the sentence but the patient of that 'verb.'
5) B is the object of bei but the agent of that 'verb.'

Though generally accepted as truisms, the above characterizations of both the ba and bei constructions seem to me quite misleading. In this paper, I shall try to demonstrate that they are altogether rather superficial observations or half-baked truths. I shall start with the ba construction, but since the two are closely related to each other, and are related in almost identical ways to many other syntactic constructions, what we say here about the ba construction will be mostly applicable to the bei construction as well.

3. The Characteristics of the Ba Construction.

The first step for redefining the ba construction must be the recognition that it is a special formula with a special structural meaning. This means that
we must regard \textit{ba} as a single morpheme serving as a marker for the special relationship among the string of linguistic forms in that formula. In other words, enumerating 'different kinds' of \textit{ba} sentences would be theoretically meaningless, unless we can also define the common property of those different kinds of \textit{ba} sentences.\footnote{Only in this way can we provide a consistent and unified interpretation of all possible \textit{ba} sentences and thereby justify the claim that there is a single unique \textit{ba} construction. The common property of all \textit{ba} sentences will then be the definition of the unique morpheme \textit{ba}. With this understanding and on the basis of the formula $A \text{ ba } B \text{ + } C$, we can now proceed to define this peculiar construction.} 3.1. The most prominent semantic feature of the \textit{ba} construction is perhaps the restriction that $C$ in the above formula must be a \textit{descriptive expression about the status of B}, as a \textit{result of a certain action}. The term 'descriptive expression' here does not mean simply an adjective or a modifier. It means a statement which, serving as the predicate of the sentence, describes the status or condition of, rather than an action or process about, $B$, at a certain point of time. Such a descriptive expression can appear in various syntactic forms, but as long as it possesses that quality of \textit{descriptiveness}, it will qualify as $C$ in the formula for the \textit{ba} construction. Otherwise, the grammaticality of the \textit{ba} sentences would be questionable. This qualification of $C$ in the \textit{ba} construction has quite a few corollaries which can be readily discussed below.

3.1.1. Corollary I.

This qualification means that, in terms of syntactic structure, $C$ is directly related to $B$, with only an indirect relationship to $A$. Since previous studies do not see this aspect of the \textit{ba} construction but, instead, regard $A$ as the subject and $B$ as the 'preposed object' of the 'verb' in $C$, they are naturally puzzled by the \textit{ba} sentences which contain a so-called 'retained object' in $C$ like the following.\footnote{3}

\begin{itemize}
\item[a)] 他把黑板(上)写满了字。
\textit{Tā bā hēibān (shàng) xiěmǎnle zì.}  
'He covered the blackboard completely with writing.'
\item[b)] 他把花瓶(里)插了一把花。
\textit{Tā bā huāpíng (lǐ) chāle yībā huā.}  
'He stuck a bunch of flowers into the flower vase.'
\item[c)] 他把那个橘子剥了皮。
\textit{Tā bā nèige júzi bāole pí.}  
'He peeled that orange.'
\end{itemize}
Ba sentences like the above are very common, and there is nothing unusual about them, when we look at them in the light of our new interpretation, because C in the above sentences clearly describes the status of B and, together, they form natural sentences with basically the same meaning. For example:

a') Heibān (shàng) xiěmănle zì.
   'The blackboard is covered with writing.'

b') Huāpíng (lǐ) chāle yībā huā.
   'The flower vase has a bunch of flowers in it.'

c') Nèige júzi bāołe pí.
   'That orange is peeled.'

3.1.2. Corollary II.

Since, in a ba sentence, C describes a specific condition of B as the result of a certain specific action, it follows then that it can only describe that condition in a definite and positive way, instead of saying vaguely that B is not in a certain specific condition, because that would be tantamount to saying that, as a result of a certain specific action, B turns out to be in an indefinite condition—a contradiciton to common sense. Therefore, one syntactic restriction to the ba construction is that the predicate C cannot be directly negated. Negation is possible only before the marker ba, or any auxiliary verb before it, to express the idea that B has not yet been, or is not going to be, turned into a certain specific condition. For example:

a) *Tā xiăng bā qián bù huángēi wǒ.
   *He doesn’t intend to return the money to me.'

b) Tā bù xiăng bā qián huángēi wǒ.
   'He doesn’t intend to return the money to me.'

But if a negative particle appears in an idiomatic expression which carries a positive connotation, that expression can naturally function as C in a ba sentence. For example:

c) Zhèjiān shì bā tā chādiār méi qīshī.
   'This incident made him so mad that he almost died.'
3.1.3. Corollary III.

A well-known fact about the Chinese language is that it does not syntactically mark the distinction between active and passive voice (Cf. Chao 1968:702-706). Hence, the following famous example can be taken either way.

a) 鸡吃，鱼不吃。
   Jī chī, yú bù chī.
   'The chicken is eating, but the fish is not.' or
   'Chicken will be eaten, but not fish.'
   (i.e., 'I'll eat chicken, but not fish. ')

An action verb in the passive sense (or a passive participial as the English word 'broken' in the sentence 'My heart is broken.' ) is basically stative and descriptive in nature, rather than indicating a process or action. It, therefore, qualifies as C to describe B in a ba construction. There are many ba sentences with a single action verb and the particle le as their C, or predicate. For example:

b) 我把汽车卖了。
   Wǒ bā qìchē mài le.
   'I sold my car.'

c) 他把鸡杀了。
   Tā bā jī shā le.
   'He killed the chicken.'

d) 别把钱丢了!
   Bié bā qián diū le!
   'Don't lose your money.'

In these sentences, the verbs mài, shā, and diū are all used in the passive sense. This can be seen through comparison with the following sentences.

b') Qìchē mài le. 'The car is sold.'

c') Jī shā le. 'The chicken is killed.'

d') Qián diū le. 'The money is lost.'

This peculiar syntactic character can also be seen from three other different aspects. Firstly, the agent of the action verb does not have to be A. For example:
e) 他把头发剪了。
   Tā bā tóufa jiānle.
   'He has his hair cut.'

The main point of this sentence is that his hair is cut. As to whether he himself cut it (unlikely), or somebody else cut it for him (more likely), the sentence simply does not specify it. Secondly, an adverb of quantity can be added to the front of the action verb. For example:

f) 他们把花生全吃了。
   Tāmén bā huāshēng quán chile.
   'They ate all the peanuts.'

Comparing this sentence with Huāshēng quán chile 'The peanuts are all eaten,' we can see that the adverb quán indicate that the verb phrase quán chile is directly related to huāshēng (B), not to tāmén (A). Thirdly, we can optionally add the word gěi to the front of the action verb. For example:

g) 我把他给忘了。
   Wǒ bā tā gěiwàngle.
   'I forgot him.'

As we all know, gěi in front of a verb marks it as passive.

3.1.4. Corollary IV.

One common syntactic pattern in Mandarin Chinese is the so-called ‘verb-complement’ compound which consists of an action verb followed by a term representing the result or the direction of that action, such as dǎ-pó ‘打破’hit-broken,’ shā-sǐ ‘杀死’kill-dead,’ qiāng-zǒu ‘抢走’grab-away,’ ná-lái ‘拿来’carry-here,’ sòng-qù ‘送去’deliver-there,’ etc. These compounds all function as transitive verbs and most people almost intuitively regard the action verb as the ‘main verb,’ while taking the following word of result or direction to be the ‘complement.’ However, if our definition of the ‘main verb’ is not simply ‘a word representing action,’ but more substantially ‘center or head of VP,’ we will have to say that the ‘complement’ is actually the verb, while the ‘verb’ is actually an action adverb, because, in terms of internal structure, all the so-called VC compounds are endocentric constructions, with the ‘complement’ as the head. For example, when we say tuī-kāi (mén) 推开门’push-open (the door),' or (bā mén) tuī-kāi 把门推 开 (ba door) push-open,' the central concept is the same as kāi (mén) ‘to open (the door)' (or ‘to cause [the door] to open’), while tuī ‘push' is only an
action adverb showing the way through which 'opening' is carried out. (There are many other ways such as tī 踢 'kick,' jiāo 叫 'shout,' mà 骂 'curse,' kū 哭 'cry,' etc.) The so-called 'complement' in the so-called VC compounds are mostly adjectives. In Modern Chinese, when they occur alone, they can only function as modifiers or stative verbs, but not as transitive verbs. However, it is very common for them to function as transitive verbs in Classical Chinese, namely, the so-called shìdàng yòngfǎ 使动用法 'causative use.' It is, therefore, not unreasonable to regard them as 'causative verb' when they occur as the so-called 'complement' in the VC compounds in Modern Chinese. The only difference is that, while they are almost completely free to function as causative verbs in Classical Chinese, they are highly restricted for that function in Modern Chinese, the restriction being that they must co-occur with an action adverb. For example, we can only say chīwán fàn 吃完饭 'finish eating,' dàpóyízhī péizi 打破一只杯子 'break a cup,' but not wǎnfàn, or pó yízhī péizi. After we have properly defined the real nature of the so-called VC compounds, the nature of the following bā sentences should also be clear.

a) 他把头发剃光了。
   Tā bā toufa tīguāng le.
   'He has all his hair shaved off.'

b) 你快把我想死咯！
   Nǐ kuài bā wǒ xiāngsī 1ou!
   'You almost killed me by making me miss you so much!'

c) 我刚把一个朋友送走。
   Wǒ gāng bā yīge pényōu sòngzòu.
   'I just saw a friend off.'

In the above sentences, the center of C (or VP) is clearly guāng, sī, and zōu, respectively, while tī, xiāng, and sòng in front of them are their modifiers to show how such conditions are achieved. More importantly, these phrases all directly describe the condition of B, and are not immediately related to A. Moreover, just as the single action verb in the bā construction discussed in the last section, causative verbs (i.e., the 'complements') that occur in the bā construction are also used in the passive sense, describing the status of B.

3.1.5. Corollary V.

This corollary is actually a corollary of the one just discussed in the last section. Since, as we have demonstrated, the 'V' in the so-called 'VC compounds' is not really the verb but an action adverb, while the 'C' is the real verb, it follows that, in a sentence with a 'VC compound' as predicate, the
agent of the action adverb is not necessarily the subject (A) of the sentence (i.e., there is no such syntactic constraint). The only relevant point is whether that action adverb can logically express how a certain status of B is realized. Naturally, in the majority of such sentences, A is in reality the agent of the action adverb; hence, sentences like the following are the most commonly seen.

a) 他说破了嘴。
    Tā shuòpòle zuǐ.
    'He hurt his mouth by talking (too much).'

b) 他把嘴说了。
    Tā bā zuǐ shuòpòle.
    'He made his mouth hurt by talking (too much).'

However, in the following examples, the agent of the action adverb is obviously not A, but B.

c) 你可想死我咯!
    Nǐ kě xiǎngsī wǒ lóu!
    'You almost killed me by making me miss you so much!'

d) 你可把我想死咯!
    Nǐ kě bā wǒ xiǎngsī lóu!
    'You almost caused my death by making me miss you so much!'

e) 那出戏把他唱累了。
    Nà chū xiào bā tā chànglèi le.
    'He became tired by singing that opera.'

f) 那班学生把王老师教惨啦!
    Nàbān xuéshēng bā Wáng Lǎoshi jiāocān l’ā!
    'Teacher Wang became really miserable in teaching that class of students.'

Sometimes, even who the agent of the action adverb really is is not, and does not have to be, explicitly spelled out. For example:

g) 这一番话终于把他说服了。
    Zhè yīfān huà zhōngyú bā tā shuòfú le.
    'Finally, he was convinced by this talk (of somebody).'

h) 一百块钱就能把那个警察买通。
    Yībiǎnkèqián jiù néng bā nèige jǐngchá mǎitōng.
    'One hundred dollars would be enough to have that policeman corrupted (by somebody). '
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All the examples given above are normal sentences, because the so-called 'complement' is really the center of C, the predicate, which describes the status of B in accordance with the syntactic restriction we just pointed out. Syntactically, who the agent of the action adverb is is irrelevant.

3.1.6. Corollary VI

When C in the ba construction is a long descriptive phrase, it is mostly led by an action word together with the particle de. For example:

a) 他把我气得糊里糊涂的。
   Tā bā wǒ qìde húlǐhútūde.
   'He made me so mad that I became muddle-headed.'

b) 老李把老张骂得抬不起头来。
   Lǎo Lǐ bā Lǎo Zhāng màde tāibùqǐ tóu lái.
   'Old Li scolded Old Zhang so hard that he couldn't even raise his head.'

Examples like these further prove that our characterization of C in the ba construction is accurate. It is a widely known fact that the particle de can transform its preceding expression into a modifier, whatever that expression was originally. This clearly shows that the 'verb' before the particle de cannot really be the verb, i.e., the center of the predicate. Its center can only be the descriptive expression after the particle de. Just like the 'verb' in the so-called 'VC compounds,' the 'verb' before the particle de does not necessarily have A as its agent. It may also be B or some unknown entity. For example:

c) 辣椒把我吃得舌头都麻了。
   Làjiāo bā wǒ chīde shé tou dōu māle.
   'The hot pepper that I ate made my tongue numb.'

d) 那些衣服把她洗得直不起腰来。
   Nàxiē yīfú bā tā xǐde zhībùqǐ yáolái.
   'Those clothes that she washed made it impossible for her to straighten her back.'

e) 哀怨的笛声把我们吹得心酸泪落。
   Àiyuàn de díshēng bā wǒmén chuíde xīnsuānlèiluò.
   'The mourning tune of the flute made us tearful and heartbroken.'

3.1.7. When we claim that C in the ba construction must be a stative and descriptive expression, we have in mind, of course, only the standard ba sentences. Language use is, however, a social phenomenon, and in the speech
of some individuals, standards sometimes may not be carefully observed. For example, in the güci (鼓词), one form of folk literature, we may find sentences like the following:

a) 我儿在家把书攻。
Wǒ ér zài jiā bā shū gōng.
'My son studied books at home.'

Similarly, the leading character in Lu Xun's *A Biography of Ah Q* also likes to sing:

b) 我手里钢鞭将你打。
Wǒ shǒu jū gāngbiān jiāng nǐ dǎ.
(jiāng is a dialectal variant of ba.)
'I raise a steel-whip and beat you up.'

Sentences like the above are always felt to be somewhat 'unusual' to the native speakers of Mandarin. The reason, I believe, is that the C in the above sentences, gōng in (a) and dā in (b), still represent action, rather than status, and thus violate the restriction on C we just discussed. They would sound completely normal, if they should be supplemented with a descriptive expression as follows. 

a') 我儿在家把书攻得滚瓜烂熟。
Wǒ ér zài jiā bā shū gōng de gǔnguālànshòu.
'My son got his book thoroughly memorized at home.'

b') 我手里钢鞭将你打翻在地。
Wǒ shǒu jū gāngbiān jiāng nǐ dǎ fān zàidi.
'I raised a steel-whip and knocked you down to the ground.'

On the other hand, when we say C is a descriptive expression about B's condition caused by a certain action, some people may possibly take it too literally and argue against it. They may point out that in a sentence like

c) 她把你看了一眼。
Tā bā nǐ kànle yīyán.
'She cast a glance at you.'

the condition of ni is by no means affected. This is, of course, true, but only in the sense of ni's physical condition. It would not be true, if we take into consideration the imagined condition which a speaker projected psychologically at the time of speaking. For linguistic interpretation, what
really counts is what a speaker thinks. For example, if a speaker imagines that a man's status might be affected by a certain woman's looking at him, he could then say to him, Ta ba ni kanle yiyan. i.e., 'She pays attention to you.' or 'You've been noticed by her.' Therefore, as far as the grammaticality of the ba construction is concerned, B's condition does not have to be visibly affected. It is more of an assumption on the part of the speaker, with B sometimes even as an unknown factor.

3.2. Our discussion on the nature of C in the ba construction has practically also clarified the nature of B simultaneously, i.e., it is both the topic and the subject of the predicate C. We may now emphatically reiterate that one of the characteristics of the ba construction is that, syntactically, B is the subject of the predicate C, and semantically, it is the main topic of the whole sentence. This view is in direct conflict with that of most previous studies which claim that B is a definite (or 'specific,' or 'generic,' etc.) noun serving as the 'preposed object' of the 'verb' in C. A few corollaries can also be logically deduced from our new view.

3.2.1. Corollary I.

As the main topic of the sentence, B can never be omitted. Thus, the following sentence is ungrammatical and simply doesn't make sense.

a) *他们把看得太简单了。
   *Tämén ba kānde tài jiândān le.
   'They took too lightly.'

It has to be like the following.

b) 他们把他看得太简单了。
   Tämén bā tā kānde tài jiândān le.
   'They took him too lightly.'

3.2.2. Corollary II.

B is a postposed topic and the real subject of predicate C. From the following example, we can see that B is most definitely not the 'preposed object,' as most people have claimed, and some of them even used this 'piece of evidence' for the argument that Chinese has changed from an SVO language to an SOV language.
a) 把我笑得肚子都疼了。
Bǎ wǒ xiàode dùzi dòu téngle.
'I laughed so much that even my belly began to hurt.'

b) 一瓶茅台把他喝得烂醉如泥。
Yìpíng máotái bā tā hēde lànzuì rúní.
'He became completely drunk after a bottle of maotai.'

3.2.3. Corollary III.

Though we also regard B as a topic (and the main one) as some scholars do (e.g., Tsao 1987), we do not think it has to be definite (or 'specific' or 'generic,' whatever they mean). Definiteness and topicality are two categorically unrelated semantic features for nominal expressions, and one is not an essential or required element for the other, though, on the pragmatic level, they often co-exist. Therefore, B, the main topic in a ba sentence, does not have to be, though mostly is, a definite noun. Ba sentences with a definite B are too common to need any examples. So we shall give here only two examples in which B is definitely not definite, nor 'specific,' nor 'generic.'

a) 一颗流弹把一个路人打伤了。
Yīkē liúdàn bā yīge lùrén dāshāngle.
'A straying bullet wounded a pedestrian.'

b) 什么枪都能把人打死。
Shénme qiāng dōu néng bā rén dāsǐ.
'All guns can kill people.'

The fact that B in the ba construction is not specifically required to be definite can be seen even more clearly through the following contrative pairs where an indefinite noun in a non-ba sentence remains indefinite as B in the corresponding ba sentence. The only difference between the two sentences in the same pair is that, in the ba sentence, that noun becomes the topic which the speaker intends to emphasize.

c) 他买重了一本书。
Tā mǎichóngle yīběnshù.
'He bought a certain book for the second time.'
c') Tā bāyīběnshù mǎichóngle.

d) 他递给我一双筷子。
Tā dìgěi wǒ yīshuāng kuāizi.
'He passed a pair of chopsticks to me.'
d') Tā bā yīshuāng kuàizi dīgēi wǒ.

There are occasions, however, when a non-ba sentence is transformed into a ba sentence, the indefinite object in the former may somehow become definite in the latter. For example:

e) 他攒起钱来了。
Tā zǎnqí qián láile.
'He starts saving money, now.'

e') Tā bā qián zǎnqí láile.
'He saved his money.'

f) 我想给她介绍一个朋友。
Wǒ xiǎng gěi tā jièshào yīge péngyǒu.
'I plan to introduce a friend for her.'

f') Wǒ xiǎng bā yīge péngyǒu jièshào gěi tā.
'I plan to introduce a friend of mine to her.'

Frankly, I still do not know what is involved here in the change, though I suspect that it might be because lexicons sometimes fluctuate in meaning in different contexts.8

3.3. Since A occurs at the beginning of the ba construction, it is, by Y. R. Chao's definition, also a topic. But unlike B which is the semantic focus of the ba construction, A can only be called the secondary topic of the sentence. This characterization of A has also its corollaries.

3.3.1. Corollary I.

A's relation to the predicate C is, both semantically and syntactically, indirect. This can be seen from the following examples.

a) 这班学生把王老师教得心灰意冷。
Zhébān xuéshēng bā Wánglǎoshī jiàode xīnhuīyìlèng.
'Teacher Wang became depressed through teaching this class of students.'

b) 这段路把小李跑得上气不接下气。
Zhéduān lù bā Xiǎo Lì pāode shàngqì bùjiè xiàqì.
'Little Li was out of breath through running this route.'
3.3.2. Corollary II.

A ba sentence without A is still a good ba sentence with basically no change in meaning, but it cannot be without B. Actually, sometimes it may be rather hard to determine what the omitted A is, if indeed it exists, to begin with. For example:

a) 看，把他累得...
   Kàn, bǎ tā lèide.....!
   'Look, how exhausted he is!'

b) 真要把我急死了!
   Zhēn yào bā wǒ jīsǐ le!
   'I'm almost worried to death!'

c) 我编的。我还不怕，就把你怕成那样？
   Wǒ biāndé. Wǒ hái bú pà, jiù bā nǐ páchéng nàyàng?
   (from Zhao Shuli's Li Youcai Banhua李有才板话.)
   'I made it, and yet I ain't worried, and you're just worried like that?'

The role that A plays in the ba construction can perhaps be defined like this: 'Connected to B by ba, it is thought (by the speaker) to be responsible for the fact that B turns out to be what C describes.' There may be, of course, different degrees of responsibility, but as far as the grammaticality of the ba sentences is concerned, the degree of A's responsibility does not have to be, though can be, very deep and direct to qualify it for such a role. The most obvious case of responsibility is, of course, that A itself directly created such a condition for B. For example:

d) 猫把老鼠咬死了。
   Māo bā lǎoshú yǎosī le.
   'The cat killed the mouse by biting.'

But sometimes A may be only slightly responsible, or merely instrumental, for what happened to B. For example:

e) 你快把我想死咯!
   Nǐ kuài bā wǒ xiāngsì lou!
   'I may soon die for missing you!'

f) 洗冷水澡把他洗病了。
   Xǐ lěngshuǐzào bā tā xībìng le.
   'He became sick for taking a cold-water bath.'
And sometimes A may be nothing more than an inadvertent contributing factor for what happened to B, but as long as the speaker feels it is somewhat responsible for that, he can put it in that role. For example:

**g)** 他只顾搞摊运，结果把个老婆也跑丢了。
Tā zhīguǒ gǎo tānyùn, jiéguó bā gē lǎopó yě pàodiū le.
'He spent all his time away from home as a saleman that he lost his wife.'

**h)** 他失业才不久，又把房子失火烧了。
Tā shìyè cái bǔjiǔ, yòu bā fángzi shīhuǒ shāole.
'Not long after he lost his job, he lost his house in a fire.'

**i)** 三年困难时期，他把一个独生儿子饿死了。
Sānnián kùnnán shíqi, tā bā yīge dúshēng érzi èsíle.
'In those three difficult years, he lost his only son through starvation.'

Note that, in each of the three sentences above, the so-called 'verb' (pāo, shāo, è) can hardly be said to have A (tā) as its agent. Certainly, A did not actively make, or have the intention to make, B the way it was. Nevertheless, the speakers of the sentences seem to imply that A in each case is at least partially to blame for what happened, because it was conceivably in a position to prevent that from happening.

3.4. To sum up our discussion on the ba construction, we may now define it in the following manner.

**Syntactic structure:** A ba B + C

**Semantic implication:** In connection to A, B turns out to be what C describes.

This definition is specific and precise enough to represent the structural meaning of this unique construction, and yet broad enough to cover all possible ba sentences. It should serve as the basis for any meaningful syntactic specification. It is difficult to find a construction with comparable semantic interpretation in any other language, but it seems to me that the English construction 'A + have + B + passive participial' (e.g. 'John has his car repaired.') is fairly close. The difference is that, while the English construction often implies that A engages somebody else to do it to B, the Chinese construction means mostly that A does it himself. But even this difference is not absolute. For example, when somebody says: 'I promise I'll have the job done tomorrow,' we normally do not take it to mean that he'll find someone else to do it, but that he'll do it himself. Similarly, the English sentence 'John
has his car repaired' can be most naturally translated into Chinese as Yuēhān bā chē xiūhǎo le, which normally does not mean, though it could, that John did it himself. Therefore, we may perhaps say that, while the two constructions are semantically very similar, they are quite different on the pragmatic level. Another pragmatic difference is that, while the ba construction is highly popular and productive in Chinese, the English construction is not even nearly so in English.


The bei construction in Mandarin Chinese has long been identified with 'passive voice', and this misconception in the form of the lexical item bèidòng 被动 has even found its way into the vocabulary as a common expression. For example, it is common now to say Zhèjiān shì shí wǒmen hěn bèidòng 这件事使我们很被动 'This event puts us in a passive position.' Therefore, before we can do any meaningful characterization of this construction, we must try to dissolve this mismatch. This can be done from two logical fronts. We can show that, first, not all bei sentences are passive in meaning, and, second, not all sentences with passive interpretation are formed with bei. It follows, then, that this peculiar syntactic structure must have a peculiar semantic implication of its own.

4.1. We have shown with ample evidence that Chinese verbs, without any formal change, can function in either the active or the passive sense. (See 3.1.3. Some people call this 'ergative,' but since Chinese verbs are without marking, I am not sure that is a proper term.) Following are some examples showing that sometimes a sentence with passive interpretation cannot even be expressed with bei (or its equivalents jiao, rang, and gei).

a) 电话已经打了。
   Diànhuà yǐjīng dāle.
   'The phone call has already been made.'

a') *Diànhuà yǐjīng bèi(wǒ)dāle.

b) 那节课只上了三十分钟。
   Nèijiē kè zhī shàngli shānsī fēnzhōng.
   'That class was held for only thirty minutes.'

b') *Nèijiē kè zhī bèi(wǒmén)shàngle sānshí fēnzhōng.'

c) 他升级了没有?
   Tā shēngjī'le méiyǒu?
   'Has he been promoted?'
c') *Tā bèi shēngjí le méiyǒu?*

On the other hand, there are bei sentences which do not carry the passive sense. For example:

d) 老张被他太太哭得没了主意。
Lǎo Zhāng bèi tā tāitài kūde méile zhūyì.
'Old Zhang was completely at a loss because of his wife's crying.'

e) 我让他那么一说，倒不知道该怎么办了。
Wǒ ràng tā nèime yíshuō, dào bùzhídào gāi zěnmēbànle.
'I do not know what I should do now, after listening to him.'

f) 她被那首歌唱得流眼泪。
Tā bèi náshǒu gē bā chāngde liú yǎnlèi.
'She shed tears due to the singing of that song.'

Examples like those above clearly show that, though mostly overlapping, the bei construction and the passive voice represent different concepts and should by no means be equated with each other. A more specific structural meaning must, therefore, be found for the bei construction.

4.2. The unusually high degree of similarity between the ba and the bei constructions has been noticed by many scholars, and random remarks about some aspects of these constructions have been made as an effort to explain that similarity, though an encompassing and exclusive logical explanation is yet to be offered. In this paper, we aim at offering that explanation, and our fundamental position is that, as far as their basic components are concerned, the two constructions are exactly the same except for the marker (see Section 2), but they differ drastically in terms of the interrelationship among those components. This means that, unlike the ba construction in which C, the descriptive predicate, has B as its subject and is only indirectly related to A through B, the bei construction reverses that interrelation in that its C, also a descriptive predicate, has A as its subject and is related to B only through A. Consequently, both the syntactic and the semantic qualifications we have made on the C of the ba construction will apply totally to the C of the bei construction. On the other hand, what we have said about B in the ba construction will apply to A in the bei construction, and what we have said about A in the ba construction will apply to B in the bei construction.

4.3. Since the C in the bei construction is identical in nature to the C in the ba construction, the six corollaries deduced from our characterization of the C in
the ba construction (see 3.1.1 to 3.1.6) are also true for the C in the bei construction. Indeed, simply by exchanging A and B's positions in all the ba sentences cited before, we will practically have enough examples to support our argument for the bei construction. But to reemphasize our point, the following examples can be added.

For Corollary I (C may contain a 'retained object.')

a) 阿Q...被人揪住了黄辫子。
   A Q... bèi rén jiūzhù le huáng biānzi.
   'Ah Q... was grabbed by somebody by his pigtail.'

For Corollary II (Negation before bei)

b) *我被他没骂过。
   *Wó bèi tā méimàguò.
   b') Wó méi bèi tā màguò.
   'I've never been scolded by him.'

For Corollary III (The lone 'verb' functions in a passive sense.)
   This one is too obvious to need any example.

For Corollary IV ('Complement' as causative verb in passive sense.)

c) 他们的房子被人霸占了。
   Tāmén de fángzi bèi rén bázhànle.
   'Their house is occupied by other people with force.'

For Corollary V (B does not have to be the agent of the 'verb'.)

d) 他们被烂米吃病了。
   Tāmén bèi lànmǐ chībìngle.
   'They became sick for eating rotten rice.'

For Corollary VI (A may not be the patient of the 'verb' marked by de in a long C.)

e) 老张被大蒜吃得满嘴臭气。
   Lǎo Zhāng bèi dàsuàn chīde mānzúi chòuqì.
   'Old Zhang got bad breath by eating garlic.'

4.4. Since A's role in the bei construction is equivalent to that of B in the ba construction, the three corollaries drawn from our characterization of the
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latter (see 3.2.1 to 3.2.3) are also true for the former, as can be seen from the following examples.

For Corollary I (A cannot be omitted.)

a) *??* běi tūshàngle hóngsè.
   (雕像的)嘴唇被涂上了红色。
   'The statues' lips are painted red.'

b) 他被武侠小说看得很着迷。
   Tā běi wǔxiā xiǎoshū dúde zháolemi.
   'He was addicted to the reading of martial art novels.'

c) 文革期间什么人都被整过。
   Wéngé qiānjiān, shénrén dōu běi zhěngguò.
   'During the 'Cultural revolution,' everybody was made to suffer at one time or another.'

4.5. Like A in the ba construction, B in the bei construction is the secondary topic, and does not have to be the agent of the 'action verb' in C, as many people tend to believe. The two corollaries for the former, therefore, also apply to the latter. Following are some examples.

For Corollary I (B is only indirectly related to C).

a) 他被那本小说看出了神。
   Tā běi nèiběn xiǎoshū kàndé chúlèshén.
   'He was sent out of this world by his reading of that novel.'

b) 因为以权谋私，他被开除了党籍。
   Yīnwèi yìquánmóusī, tā běi kāichùle dāngjí.
   'Because of corruption, he was dismissed from the party.'
4.6. Based upon the examples above, we can now characterize the bei construction as follows:

Syntactic structure: \( A \text{ bei } B + C \)

Semantic implication: In connection to \( B \), \( A \) turns out to be what \( C \) describes.

This characterization is broad enough to cover all grammatical bei sentences, and it also explains unequivocally why all people feel that the ba and the bei constructions resemble each other so much both in appearance and in meaning. Indeed, if this interpretation is correct, they can be regarded as merely mirror images to each other, the difference being the shift of emphasis between \( A \) and \( B \).

5. The Interrelation between the Ba and the Bei Constructions.

Linguistic constructions always work together as an integrated system in which different parts interwine with and interact upon each other. This is certainly true for the ba and the bei constructions. Their interrelationship can be described in the following ways.

5.1. The way we define these two constructions implies that they are readily convertible to each other. This is absolutely true in a theoretical sense, though there are some pragmatic restrictions. Though most 'plain' sentences (i.e., sentences not marked by either ba or bei) can be readily converted into either a ba or bei sentence and vice versa, some cannot. On the other hand, a ba or a bei sentence can always be more easily and naturally converted into the other form. These two aspects can be exemplified by the following sentences.

a) 我紧张的心情顿时被他的笑容一扫而光。
   Wǒ jīnzhāngde xǐnqīng dùnshí bèi tāde xiàoróng yīsāoērguāng.
   'My nervous feeling was immediately wiped out by his smile.'
   a') Tāde xiàoróng dùnshí bā wǒ jīnzhāngde xǐnqīng yīsāoērkguāng.
   a') * Tāde xiàoróng dùnshí yīsāoērguāng wō jīnzhāngde xǐnqīng.

b) 那块布被他做了一条裤子。
   Nákùāibù bèi tā zuòle yǐtiáo kūzī.
   'That piece of cloth was made a pair of trousers by her.'
   b') Tā bā nákùāibù zuòle yǐtiáo kūzī.
   'She made that piece of cloth a pair of trousers.'
   (Compare with English: 'I made him a coward.')
STRUCTURAL MEANING OF BA AND BEI CONSTRUCTIONS

b') *Tā zuòle nàkuài bù yǐtiáo kūzi.
   *Tāzuóleyìtiāokūzinàkuāibù.

c') 她的花布衫被雨水紧紧地裹在身上。
   Tāde huàbūshān bèi yǔshuǐ jīnjin de guózài shēnháng.
   'Her floral blouse was wrapped tightly on her body by rain.'

5.2. The two constructions can naturally appear in the same sentence. When that happens, it is bei that takes priority over ba both in appearance and in meaning, though there might be some marginal (though doubtful) exceptions. The following examples can illustrate this relationship.

a) 她把嘴唇咬破了。
   Tā bā zuīchún yāopōle.
   'She cut (presumably her own) lip by (presumably her own) biting.'

a') 1. Wǒ bèi tā bā zuīchún yāopōle.
     'I had (definitely my) lip cut by (definitely her) biting.'
   2. Tā bèi wǒ bā zuīchún yāopōle.
     'She had (definitely her) lip cut by (definitely my) biting.'

b) 1. Wǒ bèi zéi bā qián tōuguāngle.
     'A thief stole all the (presumably not his own) money.'

b') 1. Wǒ bèi zéi bā qián tōuguāngle.
     'I had all (definitely my) money stolen by a thief.'

    2. Tā bā jíkuài qián dōu ràng (or jiào) zéi gěi tōuguāngle.

More examples can be given, but probably not necessary. The above examples are already enough to illustrate several points. First, while a sentence with its ba phrase before its bei phrase seems clearly unacceptable, its degree of acceptability would increase if its bei is replaced by the more
colloquial form rang or jiao. Second, in a ba sentence, when something that serves as B is not specified as to its ownership, we can generally assume that it belongs to A. Similarly, we can often assume that the agent of the 'action verb' in C is A. But these are perhaps merely assumptions on the pragmatic level. In a deeper sense, they are not necessarily true, because those elements are not syntactically specified. Third, when we say that, in a sentence with both ba and bei, the latter takes priority, we mean that bei must occur before ba and that the predicate C describes the status of the nominal expression in front of bei, rather than the one in front of ba. However, it could be argued that such a sentence is basically a ba sentence with the bei and the noun after it inserted into such a ba sentence. The purpose of the insertion is perhaps to specify the ownership of the noun after ba, as well as the agent of the 'action verb' in C. It has been said that, if we remove the ba and its following noun from such a sentence, both its structure and its meaning will not be affected (Wang 1984:56). The examples given above seem to indicate that it is not quite true, unless the nominal expression after ba is a co-referential pronoun to the nominal expression in front of bei, as in the following example.

c) (他) 叫人家广聚把他撵走了。
   (Tā) jiào rénjiā Guǎngjù bā tā niǎnzōu le. (fr. Zhao Shuli)
   '(He) was chased away (from the village) by Guangju.'

5.3. The most fundamental difference between the bei construction and the ba construction is whether the speaker intends to direct the listener's attention to A or to B respectively. This point can be further illustrated by the following pairs of sentences.

a) 茅台把我吃醉了。
   Máotái bā wǒ chīzuìle.
   'The Maotai liquor that I drank got me drunk.'

a') Wǒ bèi Máotái chīzuìle.'
   'I became drunk by drinking the Maotai liquor.'

b) 丢东西把他丢怕了。
   Diū dòngxi bā tā diūpà le.
   'Losing things got him scared.'

b') Tā bèi diū dòngxi diūpà le.
   'He was scared of losing things.'

c) 他把花盆绊倒了。
   Tā bǎ huāpén bāndāo le.
   'He knocked the flower vase down by tripping.'
STRUCTURAL MEANING OF BA AND BEI CONSTRUCTIONS

(Whether he was down or not is not said, but probably no.)
c') Tā bēi huāpén bānǎo le.
 'He was tripped down by a flower vase.'
(Whether the vase was down or not is not said, but probably yes.)

6. Conclusion

The sole purpose of this paper is to properly define the structural meaning of ba and bei constructions. It is believed that, without truly grasping the essence of their structural meaning, we would be wasting our time on the technicalities of syntactic specification, and reducing such an effort to nothing more than a fascinating, but hollow, academic exercise. We hope our discussion has helped in bringing out that essence. However, as it often happens when one tries to define the fundamentals, many of the lower-level implications, as well as the practical applications, of such fundamentals are inevitably left out. Naturally, our characterization of these two constructions has also left untouched many of their important peculiar features. Some of these features can be mentioned here with brief comment, but detailed discussion will not be attempted.

1) It has been noted that typical bei sentences always express some rather unpleasant or undesirable situations (from A's point of view). This is probably a reflection of the original meaning of bei as a verb ('to be covered, to be affected, etc.') in Classical Chinese. However, as the tendency to equate the bei construction with passive voice intensifies, this limitation on its use now tends to be ignored. The same limitation seems to apply to ba sentences, too, though to a far lesser degree.

2) The ba construction has always been, and continues to be, a very popular form of expression, but the frequency of bei sentences used to be fairly low, though there is now an obvious increase, especially in writing, perhaps also due to its mismatching with passive voice.

3) While bei is used frequently in more formal speech and writing, its colloquial variants, rang and jiao, are used more often in daily conversation. Another form, gei, is now also being used for this function, though still not by typical native Pekingese speakers. Ba also has a variant form, jiang, which seems to be dialectal in nature and tends to add some formal flavor to the sentences where it is used.

4) While bei, with its following noun omitted, can occur immediately before the 'action verb' in C, its variant forms, rang and jiao cannot. At least a
dummy noun in the form of *ren*, or *renjia* 'somebody' must be added, even when no specification is intended. Gei is only used immediately before the 'action verb' in the speech of typical native Pekingese speakers.

5) Though, in terms of frequency, the *ba* construction is more commonly used than the *bei* construction, the former seems to be under some restrictions that do not apply to the latter. For example, certain types of verbs such as *kànjiàn* 看见 'see,' *dédào* 得到 'receive,' etc. are said to be impossible (Cf. Wang 1984:16) for the *ba* construction (*Wǒ bā fēijī kànjiàn le*. 我把飞机看见了 'Now, I see the airplane.'), but are considered to be possible for the *bei* construction (*Fēijī bèi wǒ kànjiàn le*. 'Now, the plane has been spotted by me.') On the other hand, verbs like *dào* 到 'arrive' and *zhànchéng* 赞成 'support (a proposal) are impossible for either.

6) It has been said that though the *Ba* construction can form imperative sentences (e.g., *Bā chē kāiguòlái!* 把车开过来! 'Drive the car over here!'), but the *bei* construction cannot (Cf. Wang 1984: 55). Obviously, simple logic makes it awkward to use the *bei* construction to give orders, but it should be noted that a negative *bei* sentence can be imperative, when prohibition is intended (e.g., *Bié ràng rén piànle*! 别让人骗了! 'Don't be fooled!')

For these two constructions, there are obviously still many, many other problems waiting to be explained, but it seems to me that these may be problems mostly on the pragmatic level, or problems in the lower levels of the syntax due to semantic considerations, for example, classification of 'verbs' as to their appropriateness for the two constructions. At any rate, we cannot possibly discuss all those problems in this supposedly short paper. One big difference between the present study and most previous studies that has to be pointed out is that, while previous studies invariably directed their full attention to the so-called 'verb' in the predicate (i.e., *C*), here we persistently treat the predicate as one single and self-content unit within which that 'verb' functions as an *action adverb*. This makes it possible for us to specify the logical relationship among the three basic components, *A*, *B*, and *C*. With such a goal in mind, and in order to avoid any possible unnecessary complications, we have chosen to use these most neutral symbols, rather than the more commonly used but connotation-laden NP and VP. We have also tried, with less success, to minimize the use of such grammatical terms as subject, predicate, topic, comment, preposition, co-verb, etc., because they, rich with conventional connotations, are not absolutely necessary, if not irrelevant, in our approach and for our purpose. They might even prove to be confusing to some people.
NOTES

1. The basic concepts behind the present paper were formed about three years ago, when Professor Wang Huan of the Beijing Language Institute was serving as a visiting professor in the Department of East Asian Languages and Literatures, The Ohio State University. It is largely due to her inspiration that I began to think about the ba construction, and though we did not agree on quite a few points, I greatly benefited from her stimulating arguments, and would like to take this opportunity to acknowledge my debt to her. My preliminary thinking was later written down in Chinese and published under the title 'Shilun Ba ziju de Yuyi Texpoing,' 试论有字句的语义特性 in Yuyan Jiaoyue yu Yanjiu 语言教学与研究 (Language Teaching and Linguistic Studies, Beijing), No.1, 1987. The present paper is a greatly revised and expanded version of that Chinese article, with the discussion on bei added, as well as some remarks on my position for linguistic studies. For this, I am indebted to my colleague, James Tai, who seems to fancy this line of thinking and has been urging me to write it down for the past two years.

2. This remark is, of course, purely based upon our concern with theoretical interpretation. From a pedagogical point of view, especially that of foreign language teaching, it would be a great contribution if we can reduce the ba sentences to a few different kinds and give each an explicit explanation.

3. In order to avoid as much as possible any controversy about grammaticality, the example sentences cited in this paper are mostly 'stolen' from Wang Huan 1984, Li Linding 1980, and a manuscript by Lu Wenhuay ('Beiziju de Yuyi Fenxi'). Like most Chinese linguists, these scholars are extremely cautious and often look for examples from the literary works of modern authors, such as Lu Xun, Lao She, Pa Jin, Wang Meng, etc. Though I personally do not feel this is necessary (because I think their feeling and understanding about the Chinese language should be better than, or at least the same as, that of those authors they quoted), I have adopted quite a few of those examples, especially those which do not seem to read very 'normal,' for example, Sentences (a), (b), and (c) in 5.1.

4. Actually, I am definitely not the only one who views the 'verb-complement compounds' (VC or VR) the way I do here. For example, my colleague James Tai holds basically the same view in his unpublished paper 'On the Center of Predication in Chinese Verb-Complement Construction,' presented at 1973 Annual Meeting of the Linguistic Society of America.
5. Actually, this restriction is not so strict even in Modern Chinese where we can still find quite a few of what most people call 'adjectives' used as transitive verbs in the causative sense. For example, aside from kāi (men) just cited, we can say hóng (liǎir) 红脸儿 'turn (the face) red,' i.e., 'blush,' gān (bēi) 干杯 'dry up (the cup),' i.e., 'bottom up,' xǐ (rén) 喜人 'make people happy,' i.e., 'pleasing,' and wánle yījiān shì 完了一件事 'have one job done.' Even some of the so-called 'directional complements' can still function this way. For example, we can say shàng (cài) 上菜 'present (the dishes in a banquet),' xià(jiǔ) 下酒 'down (a drink),' lǎi (yībēi chá) 来一杯茶 'bring here (a cup of tea),' chū ge zhǔyì 出个主意 'propose a idea,' etc. However, usages like these are relatively limited in number, and they tend to appear in idiomatic expressions only.

6. Many research works on the ba construction reach improper conclusions because of their improper interpretation of the predicate C. For example, it has been suggested that the ba construction appeared as early as the Tang dynasty; because there is a line in a poem by Du Fu which reads Zúi bā zhūyú zǐxī kān: 醉把茱萸细看 (Cheung 1976). Whether the ba construction was in use so early is another question, the line obviously does not qualify as a good piece of evidence (if our interpretation is correct), because its C 'zǐxī kān' represents the action of A (omitted), rather than describing the condition of B (zhūyú). It would qualify better, i.e., if it were 'kān zǐxī.' Y. C. Li once tried nobly to define the ba construction (Li 1974) and concluded that it represents 'a specific action upon a specific object,' and that 'the verb indicates a certain definiteness in the object.' This definition cannot cover all possible ba sentences. Obviously, he also mistook the 'action verb' to be the center of C.

7. Some people have proposed the idea that Chinese has evolved from an SVO language to an SOV language (e.g., Li and Thompson 1974, Tai 1973 & 1976), and some have even explained that this is the result of the Altaic influence (e.g., Hashimoto 1975). They naturally all cite the so-called 'preposed object' in the ba construction as a piece of evidence to support their argument. Timothy Light has written against this idea (Light 1979). I have no intention to get involved in this debate, but would like to point out that my definition of B disqualifies it as a 'preposed object.' Those who are for SOV should look for evidence somewhere else.

8. Aside from the possibility that an individual lexicon can change its meaning in different context, I would like to point out that (f) and (f'), one of the two pairs of examples given here (both from Wang Huan), may not be appropriate examples, because of the relative position of the word gei. It
seems to me that (f') corresponds to Wo xiang jieshao yige pengyou gei ta, not to (f) which reads Wo xiang gei ta jieshao yige pengyou. The relative position of the phrase gei ta makes a difference in the meaning of the sentences in a subtle way which is often overlooked. For some discussion, see Hsueh 1983.

9. When we say A cannot be omitted, we mean that, when compared with B which can be easily, and is, frequently omitted, A is definitely required for a bei sentence, just as B is definitely required for a ba sentence. However, a common phenomenon is Chinese syntax is that the topic of a sentence, generally the first word, is often omitted, when the context has made it very clear. For this reason, A in a bei sentence can also be omitted, but that is a different kind of omission.

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The Door is Closed on ZHE NE
(and it's not unexpected)\textsuperscript{1}

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I. Introduction

The pseudonymous shifu retained by the JCLTA kitchen has spent the past few years cooking up an intriguing stew of particles, beginning, of course, with his own surprise over NE. The recipe as presented \textit{in seriatum} in JCLTA has shades of a French family kitchen, as it is a \textit{melange} into which everyone is permitted to throw such leftovers as s/he may have at hand. Carrots, turnips, radishes, parsnips (all turnips, of course, in this context), and even such inedibles as ZHE and NE have been tossed in. Some of the tossing has been with abandon, indeed almost with good riddance. Some of the tossing has been \textit{up} rather than \textit{in}. In any case, we should be grateful to the original chef whose imagination and generosity of composition has both inspired others and permitted them beside his stove, an act of openness almost without precedent in \textit{haute cuisine}.

One should note that the result is indeed a stew, as the Americans or the French are used to, rather than a \textit{huōquō} or a \textit{shāquō}, for it not only has the characteristics of the work of many hands operating at random and at different times, but it is also a verb. Shifu's \textit{œuvre} has some folks stewing over his tasty brew. One is not sure whether they (or, indeed, he) has ever gotten stewed over these matters. But no matter its questionable pedigree, we should be grateful to the master for providing the fare and the stimulation that has come with it.

Having come late into the kitchen, I can merely cast in a rather puerile green tomato of stunted proportions. By itself, it is inedible, as any vegetable known inhospitably as a 'foreign eggplant' is bound to be, even if only through vengeance upon eaters who doomed it to permanent humiliation by so naming it. Said unhappy plant is the forlorn ZHE, a particle distinguished by its sometimes keeping company with NE, sometimes occurring in a dependent clause, sometimes being confused as the twin of \textit{zài}, and very seldom credited with having any identity of its own. It seems so bound up with showing that other things are going on that it has little time to be self-expressive.
II. The Problem

The problem with ZHE is amply illustrated by examining examples (1-12), which come from many parts of the literature and which are now among the standard items for analysis:

(1) 门关着呢。
Mén guānzhe ne.
door close-ZHE NE
'The door is closed.'

(2) 窗户锁着呢。
Chuānghu suǒzhe ne.
window lock-ZHE NE
'The window is locked.'

(3) 他们在门口站着。
Tāmen zài ménkǒu zhànzhē.
they at door stand-ZHE
'They are standing at the door.'

(4) 钱在银行里存着。
Qián zài yínghánglǐ cúnzhe.
money at bank-inside deposit-ZHE
'The money is deposited in the bank.'

(5) 这个多着呢。
Zhēige duōzhe ne.
this more-ZHE NE
'There’s an awful lot of this!' 

(6) 他/她忙着倒茶。
Tà/mángzhe dào chá.
he busy-ZHE pour tee
'S/he's busy pouring tea.'

(7) 他/她对着镜子在做鬼脸。
Tā duīzhé jīngzhì zài zuò guǐliǎn
she toward-ZHE mirror PROGRESSIVE make weird-face
'S/he's making faces at the mirror.'
(8) 照着我的话做。
 Zhàozhe wǒ de huà zuò.
 according-ZHE my-DE speech do.
 'Do as I tell you.'

(9) 等着!
 Děngzhe!
 wait--ZHE
 'Wait! (And ...)' 

(10) 汤热着呢。
 Tāng rèzhène.
 soup hot-ZHE NE
 a) 'The soup is awfully hot.'
 b) 'The soup is heating up.'

(11) 小狗摇着尾巴跑了。
 Xiǎogǒu yáo-ZHE wěiba pǎole.
 little-dog wag-ZHE tail run part
 'The small dog ran away wagging its tail.'

(12) 教室的窗户没开着。
 Jiàoshi de chuānghu méikāi ZHE.
 class-room-de wind-ow not-open ZHE
 'The classroom windows are closed.' (Liu et. al. 1983.228)

The problem in interpreting the basic meaning and function of ZHE is that its several uses seem to have meanings that are at least incompatible, if not outright contradictory. In some instances, the correctly translated meaning of ZHE is the equivalent of English -ed or -en as in (1,2,4). In other instances, the same particle correctly translates as -ing, indicating an on-going activity as in (3,7,11). Sometimes, ZHE seems to indicate the imperative as in (8,9). It also is used with an exaggerated intensification of an adjective (5). It not only attaches to the main verb, but also to subordinate verbs (6,8), to stative verbs (6,10), and to a co-verb (7). And, in a most confusing case, it can mean either an accomplished situation or an on-going process (10).

ZHE represents an enormous learning problem for students of Chinese as a foreign language and an equal problem for those who attempt to teach the language. Typical textbook treatments have stressed at least
tacitly the apparent similarities to the English marker of on-going action or process -ing, and that emphasis together with the student's tendency to extrapolate from his/her knowledge of English anyway results in ZHE being opaque in usage and a particle that English speakers use very seldom in speaking Chinese and, when they use it, seldom correctly. In the course of any analysis of this particle, these examples and their apparent differences must be accounted for. As well, the relationship between ZHE and other aspektual particles must be accounted for—at least in some fashion. While each of the aspektual particles clearly has its own meaning, its own functions, and its own sphere of applicability, it is inconceivable that these terms could be learned and stored in language without reference to each other in some fashion or other, and that relationship should be made explicit in analysis.

III. The Core Meaning of ZHE

I wish to propose that ZHE can be properly understood only in the context of the full verbal aspect system of Chinese. I further wish to claim that the verbal aspect system in Chinese is driven by a single controlling concept. That concept is radically different from the concept that lies behind the markers on the English verb or any other Indo-European language. It is a simple concept, but its implications are wide-reaching and very dramatic when taken in their full measure. While I believe that this concept is inherent in the Chinese aspektual system, there remain some substantial theoretical problems with so strong a claim. For that reason, I shall emphasize the pedagogical sides of the issue in this paper; for, as I shall show, language teaching and learning are dramatically assisted in making a Pascallian supposition that ZHE in the Chinese aspektual system works as it is claimed here even if that cannot be entirely proven at a theoretical level.

Because of the theoretical problems alluded to above (which will be explained at the end of the paper), I offer only a weak theoretical claim regarding the meaning and function of ZHE:

(13) A Weak Theoretical Claim

ZHE means [inertia] in its core meaning. Its precise meaning and function are determined by the kind of verb that it is used with and then by the specific semantic characteristics of each verb. As
with all morphemes in Chinese, the core meaning of ZHE and the implications of that meaning are determined in relation to the other aspectual particles, which have as their core meanings:

LE  [change]
ZHE [inertia]
GUO [experience] (= initiation within a given time period)
MEI [no change]

Because experience and analysis both suggest that teaching ZHE (and indeed all the aspectual particles) is greatly enhanced by engaging in the Pascallian-type of supposition mentioned above, I offer the following strong pedagogical claim:

(14) A Strong Pedagogical Claim

Whether (13) is accepted theoretically or not, ZHE is best taught initially as though its basic meaning is [inertia] and as though the other aspectual particles carry the basic core meanings as given in (13). ZHE is best understood by the student as a member of a system which has a principal determinant and from that determinant all else follows. Teaching ZHE this way will both (a) permit students to begin with a general rule/concept which governs both the majority and most frequent cases and which makes consistent things that would otherwise appear contradictory in the behavior of this particle (and the whole system); and (b) direct students' intellectual attention appropriately away from superficial similarities to English that very quickly will mislead them. (e.g. English -ing)

In (13) and (14) I have referred to the notion of core meaning. This notion is not new. It is implicitly encoded in most Chinese dictionaries, and it is the basis for the guidelines to constructing the semantic chains which lie behind antithetical couplets in regulated verse. A core-meaning analysis presumes that each morpheme has a fundamental semantic content and that all uses and functions are derived from that semantic content. This kind of analysis further holds that syntax is based upon the relations of the core meanings of concatenated morphemes. A core-meaning analysis is presumed in some works written in Chinese. It is also presumed in a few analyses of Chinese produced in English in the United
States (e.g. Hsueh 1984, 1985; Ma 1985 and elsewhere; Light 1980, 1983, 1986)

The problem with a core-meaning analysis is that it is difficult to constrain and therefore may be too open-ended and/or utterly nonreplicable. An important theoretical step in the analysis of Chinese grammar will be to constrain core-meaning analyses in such a way that the use of core meanings of significant morphemes in analysis will be more illuminating than profligate. This is, of course, the principal theoretical difficulty with making (13) any stronger a claim than it is. At the end of the paper, I shall attempt to deal with this problem briefly.

For the moment, however, consider (1-12) and the fundamental meaning and function that can tie those clearly disparate examples together. Although there are substantial syntactic issues that arise from any treatment of ZHE (and these will be taken up below), no conceivable syntactic analysis of ZHE can account for the various uses that are given in (1-12). The only phrase structure rule that applies to ZHE is one that places it after verbs, a rule that itself must be constrained at least somewhat because of the different sorts of verbs that, under certain conditions, may take ZHE, as indicated above. The only transformation rule that seems to apply to ZHE is the one which places it in subordinate clauses as in (11). Such rules, however, fail to account for the extensive meanings that we have seen to operate in the uses of ZHE illustrated in the above examples. This is implicitly acknowledged by other workers in the field, and both theoretical and pedagogical accounts of ZHE have concentrated on a basic semantic analysis of the particle, the kind of analysis that is referred to here as core meaning. However, the core meanings proposed for this particle tend to be of the character of duration or on-goingness. To be sure, ZHE carries the flavor of an extent of time or process of activity, and most of its uses can be analyzed in that way. Unfortunately, however, it is difficult to understand how (8) and (9)--both imperatives--the ambiguity of (10) and the affirmative static character of (1) and the negative static character of (12) are fully accounted for by the semantic feature of [duration]. Duration as a term involves periods of time. Where there is a bounding of a situation through a link to another simultaneous situation as in (11), duration is clearly indicated. But there is no time implication for (1), (8), (9), and (10). Further, through using semantic concepts such as process, on-goingness, duration, progress, continuation, the inherent similarity among all the uses of ZHE cited above is obscured. With [duration] as the principal feature of ZHE, inevitably ZHE must be divided up into several homophonous morphemes and we end up with
THE DOOR IS CLOSED ON -ZHE NE

ZHE₁, ZHE₂, ZHEₙ. It may be that for some morphemes of Chinese—as for some morphemes in other languages—this is the only analysis possible. But the multiplication of homophonous morphemes should be constrained as severely as possible, for if that device is used too libertinally, our grammar becomes only a list of items and has little, if any, explanatory value.

The notion of [inertia] as proposed here is defined in the strict physical sense. In physics, inertia means that there is radically no change in a given physical system. A body at rest that does not begin to move is in a state of inertia. Similarly, a body that is moving at a rate of X in direction Z and that neither changes speed nor direction is in a state of inertia. A set of examples from Ma (1985) is interestingly helpful here, for, although Ma herself relies far too much on the notion of [duration] to account for the variety of meanings of ZHE and is thereby forced to come up with different examples, her magnificent collection of examples helps underscore the likelihood of analysis such as that presented here. Note in the following the contrast between zài and ZHE (from Ma 1985.20).

(15a) 他/她在穿大衣。
Tā zài chuān dàyī
S/he zai put on coat
'S/he is (in the process of) putting on her/his coat.'

(15b) 他/她在穿着大衣。
Tā chuānzhe dàyī
S/he ,wear-ZHE coat
'S/he is wearing a coat.'

(16a) 他/她在停车。
Tā zài tíng chē.
S/he zai park car
'S/he (is in the process of) parking the car.'

(16b) 车在那儿停着。
Chē zài nàr tíng-ZHE.
Car zai there park-ZHE
'The car is parked there.'

These contrasting pairs highlight the common feature of ZHE as [inertia] because all four reveal duration, but only the (b) sentences show that there
is no change occurring, which is the definition of inertia. [Duration] as a feature is uniquely applicable to zai.

Proposing [inertia] as the governing concept of the particle ZHE has two prominent advantages. First, it is only this concept which incorporates all of the uses of ZHE indicated in (1-12) and all others that I have been able to find cited in the field and used in real speech and writing. It is only this concept which accounts for the rather widely (indeed superficially contradictory) translations that we must give of ZHE such as -ing in one instance and -ed in another. It is only this notion that unites in a logical understanding the otherwise not necessarily related notions of on-goingness, duration, state, and process.

The second advantage of employing this concept to account for ZHE is that it relates ZHE explicitly to the other aspectual particles and to the underlying system of Chinese aspect. Because this paper does not deal at length with the whole aspectual system, only a brief accounting of that system is possible here. As sketched in (13), the four aspectual particles have -le at their center. -le is defined as always indicating [change]. As with the notion of [inertia] for ZHE, [change] as the basic meaning of -le is interpreted differently for different semantic subclasses of verbs, but in all cases, the fundamental meaning is that of a change occurring. Four simple examples will suffice to illustrate the point:

(17) 王武勇昨天买了很甜的苹果。
Wáng Wúyòng zuótiān mǎile hěn tián de píngguǒ.
Wang Wuyong yester-day buy-le very sweet-de apple
'Wang Wuyong bought some very sweet apples yesterday.'

(18) 有十年我没见小李。他真高了。
Yǒu shí nián wǒ méi jiàn Xiǎo Lǐ. Tā zhēn gāo le.
be ten-year I neg. see Little Li he real tall-le
'It's been 10 years since I saw Little Li. He's really gotten tall.'

(19) 对了!对了!我现在明白了。
Duìle! Duìle! Wǒ xiànzài míngbáile.
right-le right-le I now understand-le
'Right! Right! Now I understand.'
(20) 王武勇快走了。
Wáng Wǔyǒng kuài zǒule.
Wang Wuyong fast leave-le
'Wang Wuyong is about to take off.'

In a more familiar accounting of -le, there are alleged to be two -le 's, one of which indicates a change in state and the other of which indicates completion. There are two problems with the notion of completion as applied to -le. First, there is a device in Chinese which always and only means completion, namely a subset of resultative verbs, the most explicit of which are wán 'finish' and hǎo 'complete,' but which also includes by implication others such as zhào 'accomplish,' dào 'arrive/accomplish,' and chéng 'accomplish.' Certainly it is far from unheard of for a language to have different devices for indicating the same meaning and function. Nor is it rare for a language to have redundant functions simultaneously occurring in different parts of a single sentence, so the normal concatenation of these resultative particles with -le should not by itself be taken as a sufficient argument to question the notion of -le as indicating completion. Nevertheless, where we do find duplication of function in language, it is always well to examine it and see if it is really there or if its appearance is merely chimerical. The presence of such putative duplication of language effort is, then, a necessary part of the argument, but not a sufficient argument by itself.

The sufficient portion of the argument comes in the second reason for not considering the principal feature of -le ever to be a feature such as [complete]. This reason is that simply on the face of it, -le by itself indicates completion only when the meaning of the verb to which it is attached necessarily implies completion in any moment of initiation. Thus, in

(21) 到了。
Dào le
arrive-le
'(S/he) has arrived.'

(22) 王武勇已经走了。
Wáng Wǔyǒng yǐjīng zǒule.
Wang Wuyong already leave-le
'Wang Wuyong has (already) left.'
(23) 王武勇昨天死了。
Wáng Wǔyǒng zuótiān sǐle.
Wang Wuyong yesterday die-le
'Wang Wuyong died yesterday.'

for the verbs, dào 'arrive', zǒu 'leave,' and sǐ 'die' the initiation of the
action is inherently simultaneous with the completion of that action. But
for

(24) ... 吃了...
... chīle...
... eat-le...
'has eaten / begun eating / about to eat'

(25) 找了三天没找到。
Zhǎo le sān tiān méi zhǎodào.
search-le three-day neg find-accomplish
'(I've) looked for it for three days and haven't found it.'

it is impossible to say that any action has been completed. The common
feature of -le attached to verbs of action has to do with initiation, not
completion. This is true whether the verb is perceptual such as kàn
'look/see,' ting 'hear/listen,' motional such as pāo 'run' zǒu 'walk',
cognitive such as xiǎng 'think/desire,' yào 'want', physically attitudinal such
as shuì 'sleep,' zuò 'sit,' or any other type of action verb.

The significance of recognizing that the feature [initiate] is the
meaning of -le when attached to action verbs is that the Chinese verb is
inherently unmarked for any feature having to do with the implementation
of that verb. That is, as a class, Chinese verbs carry the semantic meanings
of their semantic subsets dealing with actions and specific actions,
cognitions and specific sorts of cognition, etc. But as a class they differ from
English verbs as a class in not necessarily implying implementation. It is the
Chinese aspectual system as a whole that marks verbs for all aspects of
implementation. Understanding this, it is then rather easy to see the
fundamental meanings and relationships of the aspectual particles as given
above in (13). -le indicates a change. When attached to a stative verb, it
obviously indicates that the state has changed (and hence indicates a
present situation). When attached to an action verb, it indicates a change
in the state of implementation, i.e., that the action has been implemented,
which implies a past interpretation. When attached to a verb of cognition,
it marks a change, indicating implementation of the cognition, which
yields a present interpretation. When attached to a verb of action with kuài 'quick/soon' preceding it, it indicates a change about to take place in the form of imminent implementation, and therefore has a future interpretation.

Within the aspectual system itself, -le is the most basic and therefore the least marked. As the fundamental notion of the Chinese aspectual system deals with the notion of change, -le attaches to virtually any verb and is interpreted according to the subclass of that verb, as briefly indicated above. Each of the other aspectual particles, in contrast, is much more marked in that it carries information of a more specific nature of verbal change, and therefore each particle occurs only with a subset of verbs. -guo, indicating the subject's experience of initiating at some period in the past is effectively restricted to action verbs. Méi-, indicating that a specific action was not implemented, is similarly constrained. ZHE, finally, indicating inertia (which may presume implementation and continued ongoing or non-implementation and continued non-implementation) actually attaches to members of most subclasses of verbs, but is restricted to those instances where real world logic permits an interpretation of radical unchangingness.

IV. Two Other Approaches to ZHE

While the literature abounds with attempts to analyze the meanings and functions of the particle ZHE, two particularly prominent analyses stand out. Li and Thompson's account in their monumental volume Mandarin Chinese: A Functional Reference Grammar has received considerable notice because their comprehensive book is one of the few that attempts to account for most of Chinese grammar within a single framework. J.H. Ma's monograph devoted to ZHE is surely the most exhaustive study of this particle that we have, and since its publication no subsequent studies can be carried out without a substantial and substantially beneficent influence from Ma's excellent work.

A. Li and Thompson's Global Universal Definition

In keeping with the overall aim of their massive work, Li and Thompson seek to view Chinese grammar through categories provided by universal studies of language and thereby to relate Chinese grammar and its categories to the languages of the world and the study of Chinese grammar to the study of other languages, relieving both the Chinese
language and studies thereof of much of the considerable scholarly isolation which has characterized much work on them. Li and Thompson find their lead for analyzing the Chinese aspect system in Comrie's (1976) generalized account of aspect in the world's languages, and they choose for their general definition of aspect the notion that aspect refers to "different ways of viewing a situation" (1981: 184). They then define the aspectual tokens as:

- **Perfective**: -le (and "perfectivizing expressions")
- **Imperfective (durative)**: -zai, -zhe
- **Experiential**: -guo
- **Delimitative**: reduplication of verb

The general definition given to the term aspect is so broad as potentially to include every modification to an utterance that affects the point of view of the speaker/hearer. Thus with this definition of aspect, it is difficult to understand why intensifying adverbs and qualifying or evaluative adjectives would not be included as principal aspectual tokens. Thus, it is difficult to understand why hěn 'very,' hǎo 'good/well,' huài 'bad,' jīlè 'extreme' are not considered aspect markers. And it is correspondingly difficult to grasp why the following sentences are not governed by aspect:

(26) 王武勇真坏!
Wáng Wǔyǒng zhēn huài!
'Wang Wuyong really bad'
Wang Wuyong is really lousy!

(27) 他妈的!王武勇真坏蛋!
Tāmāde! Wáng Wǔyǒng zhēn huàidàn!
hell Wang Wuyong really rotten
'Hell! Wang Wuyong is really a jerk!'

Obviously, of course, Li and Thompson do not intend for their definition to include such a broad spectrum of language tokens (i.e., probably most of language). Indeed, their subcategories of aspect as just given seem to be limited to verbal modifications which seem to have a good deal to do with time. Referring to those subcategories of aspect, Li and Thompson's definition of perfectivity is:

An event is being viewed in its entirety or as a whole. An event is viewed in its entirety if it is bounded temporally,
spatially, or conceptually. There are essentially four ways in which an event can be bounded:

A. By being a quantified event
B. By being a definite or specific event
C. By being inherently bounded because of the meaning of the verb
D. By being the first event in a sequence

(1981:185)

Even with this expanded definition, it is puzzling to figure out why one would not include: zhècì 'this occasion,' nècì 'that occasion,' liàngcì 'twice,' chángcháng 'often,' jìngcháng 'regularly,' along with other time words and expressions as aspect markers. In addition to the overall problem of excessive and therefore non-definitional generality in Li and Thompson's basic notion of aspect, their concept of perfectivity is unacknowledgedly based on verbal relations to time. It is widely accepted that the fundamental governing semantic value of the Chinese verb system is not time related, and Li and Thompson explicitly approve of that understanding. However, in their application of their general notion of aspect, they fall back on a time-based set of subcategories which have little reflection in the internal organization of the Chinese language itself.

Reflection in the organization of a given language itself is, I believe, a rather important check on any proposed analysis. Li and Thompson are perfectly correct in asserting that the Chinese language has ways of expressing the set of meanings that they group together under the term perfectivity. Presumably all languages have ways of expressing those meanings. Chinese, however, does not express those meanings in a set of tokens that are naturally grouped by the language in any way. That is, the things that Li and Thompson call perfectivity markers are not a morphological or semantic class. They have neither a paradigmatic nor a syntagmatic relationship. Nor are they a natural semantic class in any regard except that they have some denotations or connotations regarding time. Further, it is questionable whether aspectual tokens as so defined must not be an open list. For, as one muses on the expressions in Chinese—or any language!!—that can refer at some point to time (whether durative or punctual, bounded or unbounded)—it is difficult to draw lines around a set of terms that always and only have this reference. An open class is not by itself a sufficient reason for denying the existence of that class. However, when the language organizes itself with semantic,
syntactic, and morphological classes which have correlates with semantic supercategories, it is well to pay attention to that kind of organization if one wishes to understand how a given language works. The four proper aspectual markers (-le, -zhe, -qu o mei-) have a paradigmatic relationship. That is, they do not co-occur except where their core meanings can be additive. The core meanings of all other morphemes which occur together in Chinese are also additive, and so it is problematic to treat as alternative aspectual tokens things which basically co-occur as do all other morphemes when members of the same class should be essentially paradigmatic substitutions for each other.

Turning to Li and Thompson’s definition of ZHE as imperfective, which is further defined as durative, Li and Thompson list both ZHE and zai as imperfective aspect markers and cite the following as examples:

(28) 张三在打李四。
Zhāngsān zài dǎ Lìsì
Zhangsan DUR hit Lisi
‘Zhangsan is hitting Lisi.’

(29) 他在床上躺着。
Tā zài chuānghàng tāng-ZHE.
S/he at bed-top lie-ZHE
‘S/he is lying on the bed.’

However, if we refer back to examples (15-16) noted above from Ma, it becomes clear quickly why ZHE and zai cannot be considered as aspectually synonymous. In the (b) sentences which have ZHE, there is no changing occurring, which is implied by the strict meaning of [inertia], whereas in the (a) sentences, there is an action of implementation. Further problems come in referring back to examples (1,2,4,5,8,9), which are durative, but only in a very special sense and not in the same sense as each other, so that tagging them with the feature [durative] makes little sense, especially when compared with the others where the duration is clearly tied to an ongoing action and/or one action proceeding while another is punctuated in the middle of the duration. Considering the contrast of (15) and (16) and the other examples just noted, it becomes evident why [duration] is a feature which may or may not be included in the implications of [inertia] (though the reverse is not true) and that therefore as the governing feature for a given mopheme, [duration] applies uniquely to zai.

Consider finally the following:
(30) 王武勇在找他的女朋友，但是找不到。
Wáng Wǔyǒng zài zhāo tā de nǚpéngyǒu, dànshì zhǎo bù dào.
Wang Wuyong zai look his girl-friend, but look-neg-achieve
'Wang Wuyong is looking for his girl friend, but can't find her.'

(31) 小李在门口叫孩子回家。
Xiǎo Lí zài ménkǒu jiào háizi huíjiā.
young Li at door-way call child return home
'Young Li is at the door calling the kids to come home.'

(32) 王老先生呢?
Wáng Lǎo Xiānshēng ne?
Wang old mr. part.
'And (respect) Mr. Wang? (How's his health? Has he passed on yet?)'

没。老先生还在，不过身体不大好。
Méi. Lǎo Xiānshēng hái zài, bùguò shēntǐ bú dà hǎo.
No. Old mr. still at except body neg too good
'No. The old gentleman is still around, but his health isn't so
hot.'

These examples make still clearer why mixing zài and ZHE evidently not only
confuses basic meaning, but also suggests that the language is internally
chaotic in assigning equivalent meanings and functions to tokens which
have no paradigmatic patterning relationship, only an additive one. In all
of these utterances, duration is clearly inherent in the situation. For each of
them, there is a clearly implied ending point, which is a necessary feature of
durative acts. That is, durative time covers a period, and a period--
however lengthily defined--is defined by a beginning and an ending.
Inertia may occur for a period, or it may (theoretically at least) be infinite,
for inertia makes no reference (indirect or direct) to time. Time implies
change, beginnings, endings, movement across points.

B. Ma's Core-meaning Analysis of ZHE in Isolation

Those who have followed the published work of J.H. Ma (and
especially those who have had the privilege of hearing her lectures) will
notice certain similarities between her approach to ZHE and that proposed
in this paper. I wish to acknowledge here as well as in the usual fashion in
footnotes my debt to Professor Ma. Over the past decade, our approaches to the Chinese aspect system have grown in very similar directions, and the two occasions that I have had to hear her lecture on her current thoughts have been most enlightening. While taking positions that have obvious likenesses, there are substantial areas where we differ.

First, a brief summary of our points of agreement. Ma's analysis is essentially a semantic one. It is primarily language-specific, and her uniquely exhaustive collection of examples permits her analysis to cover a broader reach of actual language use than any other analysis. In her accounting, she stresses the static nature of ZHE, and she goes to the trouble of gathering the largest collection of subclasses of verbs in order to show the commonality among them in their use of ZHE. Where we are the most similar is in the recognition that grammatical morphemes such as ZHE and -le take their precise meaning from the verb class to which they adhere, though even on this point, there is a difference in this essay proposing that kind of analysis as a related set of single meanings for each of the aspectual particles.

However, in the end, Ma resorts to an analysis which divides ZHE up into a set of homophonous morphemes of different functions, of which there are four in number:

(1) Zhe in the simple zhe construction functions as a durative marker. It indicates that a situation is ongoing. (2) In the complex zhe construction, zhe is a subordination marker. Together with the verb to which it is attached, it acts as an adverbial describing the manner or the circumstance under which the main action is carried out by the subject. (3) In the comparative construction, zhe is an adversative marker. It stresses the degree of difference between the two items being compared. By stressing the difference, the speaker can convey other messages, such as surprise, disbelief, or disapproval. (4) Zhe acts as a static marker in an imperative construction. It orders the addressee to remain in the static state s/he is already in and forbids the addressee to initiate any other action. (1985: 61-2)

One area of disagreement is the elaborate set of subclasses into which Ma divides Chinese verbs. She analyzes all verbs into two principal classes and twelve subclasses. The principal classes are open-ended process verbs and punctual verbs:
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Open-ended Process Verbs (may take ZHE because durative in nature)

- Verbs of Motion: pāo 'run'
- Verbs of posture: zuò 'sit'
- Verbs of placement: fāng 'put'
- Verbs of activity: chāng 'sing'

Punctual Verbs (may not take ZHE because punctual in nature)

- Verbs of arrival: dào 'arrive'
- Verbs of departure: qù 'go'
- Verbs of appearance: fáxiàn 'discover'
- Verbs of disappearance: sì 'die'
- Verbs of perception: kànjiàn 'see'
- Verbs of achievement: shuòfù 'convince'
- Action verbs with resultative complements: zhāodào 'find'

There is no argument on the distinction between punctual and nonpunctual verbs. However, the difference in marking has to do with the initiability and completability of an action. The verbs in Ma's punctual list represent actions which are completed or achieved in their initiation, while those in the nonpunctual list permit separate initiations and completions. Not only does this relate to the meaning of -le, as noted above, but it clarifies the role of ZHE. ZHE occurs with those verbs with which an appended -le means [initiate] only. This is what would be expected of the aspectual system as described above, and what would be expected of a particle whose principal feature is [inertia]. Moreover, it would be expected that just these verbs would take resultative verbs which indicate completion or achievement and that ZHE does not co-occur with those resultative verbs. That is indeed the case, suggesting again that [inertia] must be the fundamental feature of ZHE. Were [duration] the fundamental feature of ZHE, there would be little reason for it not co-occurring with resultative verbs indicating completion and achievement, since a completed state may endure.

It is difficult to know what are the independent justifications for the subclasses that Ma lists other than their shared meaning. The approach taken in this paper relies very heavily on meaning, and it is for that reason that structural correlatives are urged at all points, as will be pointed out in Section VI below. Without further explanation by Ma, I have difficulty in understanding the subclasses which she outlines.
Yet another problem comes in trying to fit intensified or exaggerated expressions such as (5 & 10) into an overall scheme for ZHE. The following examples from Ma illustrate the problem:

(33)  他跑着呢。
Tā pāo ZHE ne.
he run ZHE part.
'He is in the midst of running.'

(34)  他高着呢。
Tā gāo ZHE ne.
he tall ZHE ne
'He's very tall.'

Durativity has nothing to do with (34) because durativity connected with time in Chinese. Rather, this use of ZHE is connected with the notion of stasis or inertia both through paradigmatic alternation with -le and also through parallelism with emphatic shì and descriptive/existential shì...de.

(35)  小王是很高。
Xiǎo Wáng shì hěn gāo.
young Wang be very tall
'Young Wang is indeed very tall.' (contrastive/echoing)

(36)  小王是昨天来的。
Xiǎo Wáng shì zuótiān lái de.
young Wang be yester-day come de
'It was yesterday that Young Wang came.'

That is, ZHE as the indicator of [inertia] expresses exaggeration or intensity through the emphasis which the necessary addition of [inertia] must bring, and this process is not unlike the semantic effect of adding shì, which also states that the given proposition is indeed the case.

V.  Syntactic Matters

The arguments presented here are largely semantic, lexical, and, where syntax is even marginally involved, paradigmatic. However, there are indeed three significant syntactic factors in the use of ZHE which must be taken up here.
First, ZHE as the marker of [inertia] syntactically bears scope over the whole VP and not just the verb. We see this from (12) where the only interpretation possible is that the nonoccurring of the event is a static, nonchanging condition. This co-occurrence with, and scope over, mei-gives further weight to the contention that the notion of core-meaning proposed here is accurate. In this version of core-meaning, such overlaps and simultaneous use are expected because the meaning which adheres to the morpheme that is its principal marker is additive and therefore may indeed co-occur with other morphemes where there is no inherent semantic contradiction. In (12) the addition of ZHE indicates that the windows are still in-the-condition-of-non-opening, that is closed.

Second, examine the following pair of sentences from Ma:

(37) 他在存钱。
Tā zài cún qián
he zai save money
'He is depositing the money.'

(38) 钱在银行里存着。
Qián zài yínhánglǐ cún ZHE
money at bank-inside save ZHE
'The money is deposited in the bank.'

The first of these sentences is a straight subject-verb-object sentence, with the object in the role of patient (i.e., the-acted-upon). In the second, the object of the first has become the subject, but its role remains the same; it is still the thing that something is done to (it has been deposited) and not the actor or agent despite its subject position. ZHE is unquestionably by itself no marker of ergativity. However, it is part of what marks the sentence so that it expresses an ergative meaning. As in the case of (1), the subject, being inanimate, can neither be an agent nor an active subject in any way that may suggest an action in progress. It may be the subject only of a VP which indicates a thoroughly static condition.

Third, the role of ZHE in marking the subordinate clause in complex sentences, which Li and Thompson (1981 and elsewhere) have so helpfully analyzed, provides further syntactic agreement for the analysis proposed here. Consider the following pair of sentences:
(39) 他/她躺着看报。
Tā tǎng ZHE kàn báo
S/he lie-down ZHE read paper
'S/he was lying down reading the newspaper.'

(40) 他/她不躺着看报。
Tā bù tǎng ZHE kàn báo
S/he neg lie-down ZHE read paper
'S/he doesn't read the paper lying down.'

The function of ZHE is to mark the verb in the first clause as radically not changing so that the second (independent) verb phrase can be interpreted as expressing the action of the utterance. It is difficult to account for this syntactic role except through the meaning and implications of [inertia] proposed here.

IV. The Notion of Markedness

Fundamental to the arguments presented here is a presupposition of the theory of markedness. Following the work of Roman Jakobson, I assume that each Chinese morpheme--especially grammatical morphemes--brings to the strings with which it is concatenated a given semantic feature with which that morpheme is marked. Marking theory holds that each token is marked for a given feature. Other tokens may or may not have that feature, but wherever the given token appears, that feature must be counted in the discourse. This means that there may be inertial implications elsewhere. For example, the notion of inertia is sometimes implied in zài when it refers to [duration]. But [inertia] is not the fundamental feature of zài, as we have seen, whereas [inertia] is the fundamental meaning of ZHE so that whenever and wherever ZHE occurs, that meaning must be part of the discourse. Following from this, of course, is that it is only with ZHE that the full range of implications will be obligatory readings.

The role of markedness theory in the notion of core meaning is, I believe, fairly evident. The following principles are basic to markedness theory:

a) Wherever token X occurs, its base meaning [y] must be counted additively in the discourse.
b) Wherever X does not occur, the meaning [y] may be interpreted as present in the discourse or not, depending on the implications of other tokens and the implications of their basic meanings.

c) Thus, while the presence of X necessarily implies the presence of [y], the absence of X does not necessarily imply the absence of [y] somewhere in the discourse.

These principles are precisely congruent with the explicit lexical nature of Chinese. Given the deletion rules of Chinese discourse, together with the complex partial overlaps in semantic function of many grammatical morphemes, it is difficult to come up with a very great list of morphemes which are always present when the meaning that is particular to them is present. This is true not only of verbal aspect particles, but as well of deictic pronouns/adjectives, conjunctions, prepositions (or co-verbs), and even of those syntactic positions which carry an inherent meaning, such as the preverbal and postverbal distinctions between durative and punctual time and between contrastive and noncontrastive nouns.

Understanding markedness theory as a fundamental way to interpret the reality of human language, these principles also help explicate why the two alternative approaches to ZHE discussed above are theoretically inadequate as well as being not fully explanatory of the available data. On the one hand, Li and Thompson divorce fundamental semantic functions from the tokens that principally carry those functions and are thereby both unable to account for the partial overlap between tokens and unable to explain the relationships among the members of the same morphosyntactic class and ultimately give a list of aspect markers which fails to have coherence and upon which the reader/student is unable to base any predictions as to what unknown items would be considered aspectual and what would not. On the other, Ma employs half of the theory of markedness but not the other half. That is, she identifies a fundamental core meaning for ZHE (and other morphemes), but she does not limit that core meaning with the understanding that the meaning may be present through other means even when the proper token is not present. As a result, her excellent monograph is confused as to whether there are four ZHE’s or one which basically means [duration].
V. Conceptual Contrastive Analysis

The pedagogical theory which underlies the analysis given here and particularly, the Strong Pedagogical Claim (14) proposed at the beginning of this essay, is based on an interpretation suggested several years ago (Light 1980) of how language learners process systemic differences between their native language and a target language of immediate concern. I have referred to this process as 'conceptual contrastive analysis.'

A derivative of structural contrastive analysis as traditionally understood in language teaching theory and methodology, conceptual contrastive analysis attempts to deal with the deepest systematic problems that a student encounters in learning a new language which are caused by interference from his/her native language. The viewpoint of conceptual contrastive analysis is that there may be whole classes of words or grammatical terms which have a fundamentally different use, function, and (especially) meaning from language to language. When moving from language to language, it is necessary to get to the heart of those fundamental differences in meaning to distinguish apparent overlaps in meaning and function so that simple propositions can be used to elucidate what will appear to the student contradictory data.

A ready case in point is the systemic difference between the Chinese adjective (or stative verb) as a class and the English adjective as a class. I refer not to the well known fact that Chinese adjectives are all verbal and that therefore the copula is not required in simple adjectival predications so that as a simple statement, Tā hěn gāo 'he very tall' is correct, but Tā shì gāo 'he be tall' is not. Rather, I refer to the less studied fact that Chinese adjectives are as a class inherently comparative with regard to the subjects of predication within their own class as well as comparative in degree of quality, whereas English adjectives are comparative only in degree of quality and make no statement regarding the relative ranking of members of the set to which the subject belongs. Thus,

(41) 誰高?
Shéi gāo? (where two or more are standing up and being compared)
who tall
'Who's taller/est?'
(42) 小王高。
Xiao Wang gao.
little wang tall
'sYoung Wang is the taller/tallest.'

As is evident from the contrast between the Chinese and the English translation, the English equivalents of these simple Chinese sentences must contain inflected adjectival forms, for the inherent meaning of the English adjective states only that a given quality is present. Further, the obligatory use of hén 'very' in simple predication can be seen to be as a disambiguator, rendering the simple predication genuinely simple, as the addition of hén removes the comparative nature of the adjective.

Unless this fundamental difference in adjectival meaning is clarified for the student and unless it becomes second nature for the student to think in comparative terms for all basic adjectives, there will be continuous misunderstandings, as indeed there are, for most American learners of Chinese as they move into a Chinese-speaking environment.

The application of conceptual contrastive analysis to the aspectual system of Chinese falls directly within the domain of markedness theory. Within markedness theory, Chinese adjectives as a class are marked for comparison among members of the same class according to a given quality. That marking must be learned along with each adjective that is mastered by the foreign student. If it is not, then there will inevitably be misunderstandings of rather basic information.

Turning to the verbal aspect system of Chinese, Chinese verbs are inherently unmarked regarding change. For verbs of action, this means that they are unmarked regarding initiation, for state verbs this means that they are unmarked regarding the condition or state depicted by the verb itself. The addition of -le explicitly marks change. The addition of ZHE explicitly marks a state of inertia. The markings on the English verb principally mark time and time relationships. Time may or may not indicate anything regarding change. Similarly, a marking for change may or may not indicate anything regarding time, and indeed may mark one time with one subclass of verbs and another time with another subclass of verbs. (That is, as we have seen above, -le indicates present when affixed to a cognitive or stative verb, but past when affixed to a verb of action.) Grasping all of the implications of this simply stated difference occupies several years of the student’s learning period. That learning period is
greatly extended by our not making the distinctions between the basic systems of the two languages as explicit as possible.

What exacerbates the problem for the English-speaking student is the obligatory morphological nature of verbal inflections in English. It is automatically assumed with a certainty which goes way beyond anything that is conscious or consciously retrievable that all verbs are marked and that they are marked for time relationships. The English speaker not only does not ask about the difference, he does not even know how to ask because this feature of English is part of the speaker's automatic control. One should note that the mere morphological difference (the sole object of interest in traditional contrastive analysis) is not the main problem for the language student. Ultimately, by itself the difference between English having tense markers and Chinese not having them is a rather mechanical thing. The English speaker who overuses -le (and who does not?) and the Chinese speaker who speaks largely in uninflected English verbs may indeed butcher the morphology of the language, but are not for that reason misunderstood. They are misunderstood and they misunderstand because they fail to grasp the wide-reaching and fundamental differences in the systems of the two languages.

This level of misunderstanding is caused not by discrete incomprehension, but by a failure to grasp a feature of a whole class of language material which runs throughout a given language. It is this level of misunderstanding which lies behind the severe difficulty which English speakers have in learning how to use ZHE correctly.

VI. Core-meaning Analysis

As indicated very early in this paper, I have assumed as basic the relevance of a core-meaning analysis of the essential grammatical morphemes in Chinese. I have discussed above both the fundamental notion of the core-meaning analysis in general and its use with the verbal aspect system of Chinese. Here, I would like to offer a few very brief theoretical comments on the core-meaning analysis as a means of approaching Chinese syntax and semantics. Although I have come to the conclusion that this approach holds the greatest promise for the analysis of Chinese, it took almost two decades to reach the point where I began to say so in classes and almost three decades before saying so in print. The reasons for so much hesitation are not only because the mainstream of American linguistics has not been going in that direction over this time period
(though certainly that has been a part of it), but because there is a major inherent problem with the core-meaning analysis. That problem is, of course, how does one constrain the analysis so that one does not simply derive whatever one reads into the language in the most libertine fashion?

Before attempting to give any answers to that question, it should be noted that the strong version of the core-meaning hypothesis which has been used here holds that a unity of meaning and function should be assumed for any morpheme in the language unless there is overwhelming evidence to the contrary. Thus, with the core-meaning analysis, one does not automatically accept the 'common wisdom' that there are two -le's corresponding roughly to a meaning having something to do with change and something to do with completion because there is historical and dialectal evidence for two nonhomophonous particles carrying these two functions and because there is some (but not conclusive) syntactic evidence for a continued separation in Chinese. Rather the two -le's position is accepted only after an exhaustive search for a common bond between what appear to be two homophonous morphemes.

Given that strong version of the hypothesis, I propose that as an analytical tool it be constrained in a rather traditional and conservative fashion. First, any proposed core meaning should be tested against all available data to see if, as a generalization, the proposed central feature applies to all examples. In this paper, that is the function of those sentence beginning with (1-12). That further is the first basis for my inability to accept the accounting in Li and Thompson as well as Ma's reliance on [duration] as the principal feature of ZHE. Together with this step is the crucial step of testing to see if there are other tokens which would appear to conflict with the proposed core meaning. That is, are there other tokens which strictly duplicate the token under investigation? Or are there tokens which supersede the token under investigation by establishing a network of semantic fields which clearly relate various tokens systematically? In this paper, the relating of the verbal aspectual particles represents such a superseding network in contradistinction to the list of scattered tokens with partial semantic similarity which Li and Thompson give as aspectual tokens.

Second, paradigmatic relations must be explicitly sought. Because Chinese is not a formally inflective language, there are few, if any, perfectly related paradigmatic sets. But there are many paradigmatically related morphemes which also share semantic relations, if we understand that the nature of the morpheme in Chinese is to have overlaps in such sets.
A paradigmatic set is one of the bases for the kind of network discussed in the previous paragraph. The four verbal aspect tokens discussed in this paper are probably as closely related paradigmatically as any four morphemes in Chinese. That rather tight relationship provides in this case a substantial check on the potential excesses in the search for core meanings.

Third, where available, syntactic tests must be sought. These are inherently the most difficult to find in Chinese because syntactic position (especially relative to the verb) carries semantic information in Chinese and there are few transformational tests available for the researcher to use as syntactic correlates to semantic information. In the present case, the only syntactic role for ZHE has to do with its place in marking dependent clauses and the relation between the verb (always inertial) of the dependent clause and that of the independent clause (always initiated). Obviously, the use of syntactic tests is the weakest, least effective test in Chinese, and the role of semantic and paradigmatic sets are the most important.

The purpose of applying such tests is, naturally, an attempt to discover a system rather than simply the meaning(s) and function(s) of a given morpheme, or simply the many ways in which a language expresses a single semantic construct. In language a system is always the correlation between the meaning(s) and function(s) that one studies on the one hand and the formal arrangement of the morphemes of the language on the other hand.

It is the importance of such tests in attempting to constrain any core-meaning analysis that leads me to partial disagreement with Shifu (= Hsueh) in his account of the final particle ne (Hsueh 1984, 1985). There he argues that ne indicates the speaker's or listener's unexpectedness regarding the statement that the speaker has just made. There is no argument that Shifu's exemplary sentences such as

(43) 我还得写一篇论文呢。
    Wǒ hái děi xiě yī piān lùnwén ne.
    I still must write one-clf. thesis NE
    'Well, I still have to write a thesis.' (contrary to your expectation)

and his now famous

(44) 牛肉呢？
    Niúròu ne?!
    beef NE
    'Where's the beef?'
clearly indicate such unexpectedness or surprise. However, it does not seem to be the role of ne to indicate surprise in such continuative sentences as:

(45) 他们(正在)开讨论会呢。
Tāmen (zhēngzài) kāi tǎolùnhuì ne.
they (just now) open discussion-meeting NE
'They are holding a discussion.'

but rather to serve as a continuative marker. It should be stressed that this is a minor disagreement with Shifu. His analysis of ne stems directly from the concerns that have motivated this essay; that is, his analysis of ne is based on the assignment of a core meaning to this particle. I question the precise core meaning assigned in this case because I do not see how it passes the semantic and paradigmatic tests suggested above and therefore how it fits into the system of final particles, but the basic thrust of Shifu's analysis seems to me to be very helpful indeed.

VII. Pedagogical Conclusion

As stated early in this essay, the strongest claim being advanced is a pedagogical one. In concluding the essay, I shall briefly mention some of the implications of treating in the way proposed here substantial learning problems that are caused by the language material itself. This can be most conveniently done by referring to three generally accepted teaching ideas and relating them to the argument presented here. Before listing those ideas, however, it is useful to note that the English-speaking student's problem with ZHE (and with many other language items that are notoriously difficult to master) stem *linguistically* from two sources. The first is contrastive, and the problem of systemic contrasts has been dealt with above. The second has to do with the 'taught' or 'learned' error as opposed to the error which occurs through interference from the student's native language. The way that material is taught in the classroom or presented in text materials, the way that the student first perceives the material, or, indeed, the earliest examples that a student is given of material which later proves to have been unlearnable for that student—all these factors may lead to mis-learning. In the case of ZHE, not only does the superficial similarity between ZHE and -ing in English produce unhelpful interference, but identification of ZHE with continuation, duration, and early examples of the -ing ZHE all serve to underscore the error, or teach it when the student hasn't yet thought of it. In teaching
English as a foreign language, we produce many errors which native-language interference cannot account for by teaching our students that there is a 'present' tense in English, even though all evidence shows that that tense is merely not marked as past, as it is used for past, present, and future depending on the context, etc.

The fundamental source for the learned error is the built-in capacity that we all have as language learners to learn (or construct!) the most general rule first. This capacity forms the basis for children's first-language learning as well as second-language learning. For children, the various stages of 'wrong' grammar that are passed through are merely successive stages of hypothetical approximations to the rule that actually obtains in standard adult speech. The child abstracts from the language material in the immediate environment and develops general rules based on that material. These rules are continuously revised as more and more language material comes into the child's ken and until the child's speech is indistinguishable from those native-speaking adults and children around her or him. Like the child, the older second-language learner constructs generalizations based on the information presented to him or her. If the material presented reflects the most general interpretation of the language item at hand, then the general learning is successful. If the material presented is peripheral, the student automatically learns a rule that is nowhere to be found in the standard language.

Deriving from these observations of the inherent language-learning capacity is one basic rule for teachers: take explicit account of the capacity of your students to develop general rules from the specific data which you give them, and therefore give data which lead to the general rules that you want them to learn.

For a linguistic item which has as varied a use--and which contrasts in its fundamental features with the apparent English counterparts--as ZHE, it is crucial to give students early on an accounting of the underlying principal that helps explain ZHE. If this is not done, students will generalize incorrectly from the data presented and will both misuse ZHE and, discovering after a time that they are wrong, then underuse it.

A second basic rule for teachers is this: where you draw upon the intellectual capacities of a student, rely on the simplest and most general accounting. This rule is, of course, related to the first one. However, it refers not only to the automatic rule-generating capacity of our built-in language device, but as well to the conscious intellectual activity which
goes along with some formal language learning. Whether a given task relies on deductive or inductive learning, it is helpful for students to have easy access to the most general rule available, and it is patently destructive for the teacher to foster confusion between the most general rule and a minor case. Again, relating ZHE to continuation and duration leads to learned errors.

A third rule is that in comparing the student's native language with the target language it is just as important to concentrate on the larger systemic differences between native and target language as on the structural details which differ between languages. As indicated above, it is certainly wrong if students regularly include copulas in Chinese adjectival predications, but such wrong sentences are not incomprehensible, and we do our students a great disservice if we neglect the contrasts and comparisons which point out these major differences.

Early in the paper a strong pedagogical claim was made. That claim and the arguments given to support it will not be repeated here. In concluding, however, it is worth noting that the burden of this essay has been to establish the relevance of the pedagogical claim through reference to markedness theory, previous attempts at accounting for ZHE, the fundamental principal governing the Chinese aspectual system, a systemic version of contrastive analysis, and the potential and limitations of a core-meaning analysis. The point of view has been that all these factors converge on the analysis of ZHE presented here, and, even if it should turn out that there eventually builds up compelling evidence against the core-meaning analysis in theory, pedagogically we are better off if we teach from that stance because it provides the kind of general rule based on meaning which permits students most quickly to distinguish and elucidate what must be mastered.

Note

1. Portions of this paper have been given as a talks at The Ohio State University and the University of California at Berkeley. I wish to express here my gratitude to both institutions for the opportunity to discuss these matters and to thank those in attendance at both institutions for helpful comments and encouragement, especially Professors F. S. Hsueh, Lu Jianming, James Tai, Stephen West and James Matisoff. I also wish to express particular thanks to Prof. J. H. Ma for discussion and inspiration. Naturally none of these scholars is to blame for any infelicities herein.
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現代漢語中數量詞的作用

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§1.引言

數量詞表示數量，這是眾所周知的。然而在現代漢語裏，數量詞並不只起著詞彙上表數量的作用，它還起著語法上的作用，這起碼表現在以下三個方面:

一、起指代作用。先看例子:

(1)今天你吃的魚，一條是鯉魚，一條是鰤魚。

例(1)裏的前後兩個“一條”一方面起著表數量的作用(表明是一條，不是兩條或三條)，一方面起著指代作用，指代“你”所吃的魚中的一條魚。下面例子中數量詞的指代作用更為明顯:

(2)他大弟弟和小妹妹都在新華印刷二廠工作，一個是會計，一個是電話接線員。
(3)樓上那家男的叫王永林，女的叫宋芳，一個是司機，一個是護士。

例(2)、(3)裏的“一個”表數量的作用已經非常弱了，這裏無需表明人的數量;這裏的“一個”純粹起指代作用。在例(2)裏，前面的“一個”指代“他大弟弟”，後面的“一個”指代“他小妹妹”;在例(3)裏，前面的“一個”指代“男的”，後面的“一個”指代“女的”。

例(2)、(3)若改為例(4)、(5)，意思完全一樣:
(4) 他大弟弟和小妹妹都在新华印刷二廠工作，他大弟弟是會計，他小妹妹是電話接線員。

(5) 樓上那家男的叫王永林，女的叫宋芳，男的是司機，女的是護士。

更值得注意的是，我們不能認爲例(2)，(3) 裏的“一個”後頭省略了什麼名詞，事實上在“一個”之後根本就補不出什麼名詞，足見這裏的“一個”純粹起指代的作用。

二. 用以構成某種特殊的句式。

1. 構成周遍性主語句，數量詞限於“一”。例如：

一個(人)也不去。
一位(老師)都不認識他。
一個(人)也沒有聽說過。
一個(字)都不認得。

2. 構成表示“每”的數量結構對應式。例如：

兩個人(住)一個房間。
一天(生產)六萬噸。
三個人(組成)一組。
三分鐘(敲)一次。

三. 對某種語法結構起某種制約作用。例如：

(6) 他抓了我一道血印子。
下文將會談到，像“抓了我一道血印子”這類雙賓結構，其直接賓語必須帶數量詞，否則就不成立（詳§2.2）。數量詞“一道”在例（6）裏不只表示數量的作用，更主要的是為了滿足這類雙賓結構的句法要求。

上述一、二兩方面的作用，在以往的語法論著中均已有所論述，本文試就第三方面的作用擺些事實，談些看法。

§2. 某些句法組合非有數量詞不能成立。

數量詞對某些句法結構起某種制約的作用，這首先表現在某些句法組合如果沒有數量詞就不能成立這一點上。請看事實。

2.1. 在雙賓結構裏，如果間接賓語是表示跟行行為動作相關的人或事物位移終點的處所賓語，那麼直接賓語一定得帶數量詞，否則就不能成立。例如“擱碗裏三粒黃豆”，如去掉其中的數量詞“三粒”，“擱碗裏黃豆”就不成立。再如：

A. 盛碗裏兩條魚
    倒缸裏四桶水
    放書包裹三本書
    抛河裏一塊石頭
    埋地底下三枝槍

    (*盛碗裏魚)
    (*倒缸裏水)
    (*放書包裹書)
    (*拋河裏石頭)
    (*埋地底下槍)

B. 來這兒兩個人
    去那兒幾個學生
    住這兒三個女同學，行嗎?

    (*來這兒人)
    (*去那兒學生)
    (*住這兒女同學)
C. 掉地上五分錢
  滾床下一個銅板
  流了地上一地水
  (*掉地上錢)
  (*滾床下銅板)
  (*流了地上水)

A 的直接賓語是述語動詞的受事, B 的直接賓語是施事, C 的直接賓語既非施事也非受事, 但是不論哪一類, 如去掉直接賓語裏的數量詞, 原雙賓結構便都不能成立。

2.2. 在雙賓結構裏, 如果直接賓語是結果賓語, 4 那麼這個結果賓語也一定得帶有數量詞, 如§1 裏舉的例(6)。再如:

A. 燙了他一個大燎泡
   (蚊子)叮了小王兩個大包
   拍了孩子一身痱子
   拉了我一個口子
   (*燙了他大燎泡)
   (*叮了小王大包)
   (*拍了孩子痱子)
   (*拉了我口子)

B. 長(了)他八大塊
   捧(了)它八瓣兒
   截(了)它三段兒

例 A, B 代表了兩小類帶不同結果賓語的雙賓結構。如果把這種雙賓結構縮化為 “V - O₁ - O₂” (V 表述語動詞, O₁ 表示間接賓語, O₂ 表示直接賓語), 那麼 A 類結果賓語 O₂ 表示在 V 的作用下 O₁ 身上所出現的不如意的症狀或變化; B 類結果賓語 O₂ 表示在 V 的作用下, O₁ 被肢解的狀況。不管是 A 類還是 B 類, 其中的數量詞都不能去掉, 否則這種雙賓結構都不能成立。

2.3 下面是有虛指賓語 “他(它)” 爲間接賓語的雙賓結構的例子: 5
唱他一段
睡他一會兒
走他一趟
(我也)玩兒他幾天
(什麼時候空了，我也痛痛快快)逛它一天頤和園。

這種雙賓結構得以成立的條件就是後面那個數量賓語。如果去掉
虛指賓語“他(它)”，述賓結構仍成立(唱一段 | 睡一會兒 | 走一趟 |
玩兒幾天 | 逛一天頤和園)；可是如果去掉那數量賓語，述賓結構
就根本不成立 (*唱他 | *睡他 | *走他 | *玩兒他 | *逛它頤和園)。

2.4 現代漢語裏的形容詞可以直接修飾名詞，儘管它們在修飾名
詞時有選擇性。^ 例如：

A. 白孔雀 熱毛巾 甜麪包
  乾淨衣服 嚴肅態度 老實人
B. 副主席 金手鐲 單衣服
  彩色電視 高等學校 慢性肝炎

A是性質形容詞直接作定語；B是非謂形容詞(或稱區別詞)^作定
語。另外還有一類狀態形容詞，如“雪白，滾燙，冰涼，白花
花，惡狠狠，火辣辣，稀里糊塗，花里胡哨，黴不溜秋，乾乾淨
淨，工工整整”等等，它們都不能直接修飾名詞，除非帶上
“的”。例如：

雪白的衣服 (*雪白衣服)
滾燙的開水 (*滾燙開水)
冰涼的腳 (*冰涼腳)
白花花的鬍子 (*白花花鬍子)
惡狠狠的臉 (*惡狠狠臉)
火辣辣的眼睛 (*火辣辣眼睛)
稀里糊塗的人 (*稀里糊塗人)
花里胡梢的衣服 (*花里胡梢衣服)
乾乾淨淨的鞋 (*乾乾淨淨鞋)
工工整整的毛筆字 (*工工整整毛筆字)

但是，如果名詞前帶有數量詞，這些狀態形容詞就能不依靠“的”而直接作定語。例如：

雪白一件衣服
滾燙一壺開水
冰凍一雙腳
白花花一大把鬍子
惡狠狠一張臉
火辣辣一雙眼睛
稀里糊塗一個人
花里胡梢一件衣服
幹幹淨淨一雙鞋
工工整整幾個毛筆字

“程度副詞 + 形容詞”，其性質類似狀態形容詞，因此也有類似上述的用法。如：

很好的車 *很好車
很好一輛車
挺乾淨的房間 *挺乾淨房間
挺乾淨一個房間
上述情況說明，狀態形容詞不帶 "的" 直接作定語的偏正結構，其中心語一定得是 "數 - 量 - 名" 結構，否則不成立。

2.5 朱德熙先生認爲，在現代漢語裏，單音節形容詞重疊式可分為兩類，一類是副詞，它能作狀語，也只能作狀語，例如：

好好兒：好好兒學習
熱熱兒：熱熱兒喝下去
高高：高高舉起
輕輕兒：輕輕兒說話

另一類是非詞，如 "薄薄，厚厚，長長，脆脆，扁扁" 等，它們不能充任任何句法成分。朱德熙先生的這個觀察基本是符合事實的。但是，值得注意的是，不管是哪一類單音節形容詞重疊式，都能直接 (不帶 "的") 去修飾一個 "數 - 量 - 名" 結構。例如：

A. 好好兒一件衣服  (*好好兒衣服)
   熱熱兒一碗茶  (*熱熱兒茶)
   高高一座山  (*高高山)
   輕輕兒一個箱子  (*輕輕兒箱子)
B. 薄薄一片肉  (*薄薄肉)
   厚厚一本書  (*厚厚書)
   長長一條線  (*長長線)
   脆脆兒一盤花生米  (*脆脆兒花生米)
   扁扁一個盒子  (*扁扁盒子)

這說明，以單音節形容詞重疊式作定語 (不帶 "的") 的偏正結構，其中心語一定得帶有數量詞，否則就不成立。
2.6 現代漢語裏有這樣一種“狀語 - 動詞 - 賓語”結構，其狀語成分從隱性語法關係（或稱語義結構關係）看，是指向賓語成分的。例如“脆脆地炸了盤花生米”，狀語“脆脆地”在語義上是說明“花生米”的。再如：

圓圓地畫了一個圈兒
工工整整地寫着兩行纏頭小楷
厚厚地釘了一個本子
薄薄地切了一片麵包
醞釀地沏了一壺茶
很整齊地站着兩行人
黑壓壓地擠了一屋子人

這種“狀語 - 動詞 - 賓語”結構得以成立的一個很重要的條件是，賓語成分一定是個“數 - 量 - 名”結構。如果去掉賓語成分裏的數量詞，便都不成立。例如“圓圓地畫了圈兒”“脆脆地炸了花生米”“薄薄地切了麵包”“黑壓壓地擠了人”等都不成立。

2.7 疑問代詞“怎麼”不能直接作名詞的定語（*怎麼人 | *怎麼書 | *怎麼學校），即使帶上“的”之後也還是不能作名詞的定語（*怎麼的人 | *怎麼的書 | *怎麼的學校）。另一個疑問代詞“怎麼樣”帶上“的”之後能作名詞的定語，不帶“的”時也不能直接作名詞的定語。例如：

怎麼樣的人 (*怎麼樣人)
怎麼樣的書 (*怎麼樣書)
怎麼樣的學校 (*怎麼樣學校)
但是，如果中心語是 “數 - 量 - 名” 結構，那麼無論 “怎麼” 還是 “怎麼樣” 就都能直接 (不帶 “的”) 作定語。例如：

怎麼一個人  怎麼樣一個人
怎麼一本書  怎麼樣一本書
怎麼一個學校  怎麼樣一個學校

這也就是說，以 “怎麼” 或 “怎麼樣” 為定語的偏正結構得以成立的前提是中心語一定要帶有數量詞，否則不成立。

2.8 “多” 和 “少” 既是形容詞 ( “多” 表示數量多， “少” 表示數量少)，又是動詞 ( “多” 表示多餘、超出， “少” 表示缺少)。不管是作為形容詞還是動詞， “多” 和 “少” 都不能直接作名詞的定語 (*多書 | *少書 | *多蘋果 | *少蘋果)。這裏需要指出的是，作為形容詞的 “多” 和 “少” 即使帶上 “的”，要作定語的話，中心語不能是單個兒名詞，一定得戴上數量詞。

多/少的一捆書   (*多/少的書)
多/少的一筐蘋果   (*多/少的蘋果)

§3. 某些句法組合沒有數量詞只能形成粘着的句法結構。

數量詞對某些句法結構起某種制約作用，還表現在某些句法結構是自由的還是粘着的就取決於其是否含有數量詞。

我們都知道，語素有自由和粘着之分。12 其實詞和句法結構也都有自由和粘着之分。所謂自由的句法結構，就是能單獨成句的句法結構，例如 “看電影”，在一定上下文裏可以單獨成句 (“你
今晚幹嗎？”“看電影。”），因此“看電影”是一個自由的句法結構。所謂粘着的句法結構，就是不能單說的句法結構，例如“掃地的掃地”雖然從構造上看是個主謂結構，但它永遠不能單說，總是處於一個被包含的地位（“星期天搞衛生，早晨一起床大家就忙開了，掃地的掃地，擦窗戶的擦窗戶，整理房間的整理房間。”），所以“掃地的掃地”就是一個粘着的句法結構。

我們看到，在現代漢語裏，有些同樣性質的句法結構，是自由的還是粘着的，就取決於其中是否有數量詞。

3.1 很有代表性的一個例子是“動詞 + 了 + 名詞”這種述賓結構。語法學界早就注意到這種述賓結構單獨站不住，例如“吃了蘋果”就不能單獨成句。要讓這種述賓結構處於單說地位，有兩個辦法：一是在末尾加上“了”，“吃了蘋果了”就能單獨成句；一是在作賓語的名詞前加數量詞，“吃了一個蘋果”“吃了點兒蘋果”就都能單獨成句。這說明，“動詞 + 了 + 名詞”這種述賓結構是自由的還是粘着的，就看賓語成分是否有數量詞，帶有數量詞的是自由的，不帶數量詞的是粘着的。13

3.2 帶結果補語或趨向補語的動補結構後面帶上名詞性賓語所形成的這種述賓結構，是自由的還是粘着的，也取決於賓語成分是否帶有數量詞：帶有數量詞，是自由的；否則是不自由。例如：

(1)（“傷着了嗎？”）“撕破點兒皮。”
(2)（“媽媽，弟弟又做錯事了！”“什麼事兒？”）“打破兩塊玻璃。”
(3)（注意！）飛進來一個蒼蠅！
(4)（“她拿什麼來了？”）“拿來三本書。”
例(1)---(4) 裏的數量詞 “點兒” “兩塊” “一個” “三本” 去掉的
話，便都站不住。“撕破皮” “打破玻璃” “飛進來蒼蠅” “拿來書”
都是合法的句法結構，但都是粘着的句法結構，它們只能處於被
包含的地位。例如：

她撕破皮也不叫疼。
打破玻璃的人找到了嗎？
飛進來蒼蠅就打。
拿來書的時候你不在。

3.3 賓語所指可以是述語動詞表示的行為動作的施事，這是漢
語語法特點之一。施事賓語句可細分為四小類：

A. 表示存在，例如：
    房間裏坐着 (五個) 人。
    門口站着 (許多) 人。

B. 表示出現，例如：
    前面走來一個老太太。
    樹洞裏飛出一個貓頭鷹。

C. 表示消失，例如：
    昨晚隔壁店裏走了一幫客。
    他們家飛了一隻鴿子。

D. 表示容納量，例如：
    這鍋飯可以吃五個人。
    這瓶酒喝不了三個人。
除表示存在的那一小類外，其餘三小類施事賓語句的賓語一定得是“數 - 量 - 名”結構，否則都是粘着的。14

3.4 對於雙賓結構，特別對於表示“給予”意義的雙賓結構，語法學界無論過去或現在都談得很多，但是都未注意到這樣一個事實：如果間接賓語(即與事賓語)為人稱代詞，直接賓語帶不帶數量詞，所形成的雙賓結構都是自由的。例如:

(1)“給我(一杯)酒！”“好，馬上就來。”
(2)“你說，我送他什麼好呢?”“送他(一塊)衣料。”

但是，如果間接賓語(即與事賓語)是個名詞，那末直接賓語帶數量詞的話，所形成的雙賓結構是自由的，例如:

(3)送學校一幅油畫。
(4)給隔壁奶奶兩條帶魚。
直接賓語不帶數量詞的話，所形成的雙賓結構是粘着的。“送學校油畫”“給隔壁奶奶帶魚”都不能單獨成句，只能處於被包含的地位。例如:

(5)送學校油畫的是五五年的畢業生。
(6)給隔壁奶奶帶魚，給樓上黃大爺黃魚，你看怎麼樣?

3.5 現代漢語裏的方位結構可以不帶“的”作名詞的定語，例如“把桌上帽子遞給我”裏的“桌上帽子”。但是這種偏正結構都是粘着的，都只能處於被包含的地位。在回答“你要哪頂帽子?”這一
問話時，決不能就說 "桌上帽子"。如果中心語帶有數量詞，由此形成的偏正結構便是自由的。例如：

(1) "你要哪頂帽子?" "桌上一頂帽子。"

這裏的 "一頂" 表數量的作用很弱，主要是為了滿足句法上的要求。再如：

(2) "帶哪幅地圖?" "書櫃裏一幅地圖。"
(3) "你準備租哪間房?" "最東邊一間房子。"

§4. 某些句法組合排斥數量詞。

上面說的是某些句法組合非要有數量詞不可。也有相反的情形，某些句法組合排斥數量詞，這也是數量詞對某些句法結構起某種制約作用的一種表現。

4.1 "山上架着砲" 這句話是有人歧義的，它可以指一種靜態的存在，表示 "山上貯有砲" 的意思；也可以指一種動態的行爲，表示 "山上正在架砲" 的意思。但是，如果在 "砲" 前加上數量詞， "山上架着兩門砲"，那就只指靜態的存在，這句話就沒有歧義。這就是說，表示動態行爲的處所主語句各式 "主[處所] + 動詞 + 着 + 賓"，其賓語成分排斥數量詞。

4.2 上面講倒，疑問代詞 "怎麼" 作定語，中心語一定得是 "數-量-名" 結構，否則不成立(§2.7)。然而，疑問代詞 "什麼" 作定語的情況正相反，中心語絕對不能是一個 "數-量-名" 結構。例如：
什麼人 *什麼兩個人 (兩個什麼人)
什麼書 *什麼三本書 (三本什麼書)
什麼蘋果 *什麼一個蘋果 (一個什麼蘋果)
什麼學校 *什麼一所學校 (一所什麼學校)
什麼衣服 *什麼幾件衣服 (幾件什麼衣服)

這就是說，“什麼”作定語的偏正結構排斥數量詞。

4.3 副詞“再”的一個作用是表示重覆。“再”所表示的重覆有兩種，一種是實際的重覆，即表示已然行爲動作的重覆，例如：

(1) 小王，你再去看看，信來了沒有。

這句話用“再”預設小王先前已經去看過信了。第二種是空缺的重覆，即表示原計劃或預想要進行或發生而由於某種原因未能進行或發生的動作的重覆，例如：

(2) 沒買着電影票？沒關係，我們明天再看好了。

這句話用“再”預設先前曾打算今天看電影，因爲沒有買着票，所以沒看成。反應在句法上有許多重要的區別，其中很重要的一點就是，表示實際的重覆，“再”之後可以有數量詞。例如：

(3) 我再吃一個蘋果，好嗎？
(4) 歡迎你們再來玩兒。

表示空缺的重覆，“再”之後絕對不能有數量詞。例如：
(5) 看來末班車已經過了，你明天再回去吧。
    (*看來末班車已經過了，你明天再回去一次吧。)
(6) “媽，我要吃冰淇淋。” “那麼晚了，到哪兒去買啊，明天再吃吧。”
    (*那麼晚了，到哪兒去買啊，明天再吃兩杯吧。)

這就是說，當“再”表示空缺重複時，受“再”修飾的成分排斥數量詞。

§5. 上面我們分別列舉了一些現代漢語句法組合中必須依賴數量詞和排斥數量詞的實際例子。本文的主要目的就是要說明數量詞在現代漢語中對某些句法組合起某種制約作用，而不在于要把與論述內容相關的語法事實列舉窮盡。從上面列舉的事實中，我們可以清楚地看到，現代漢語裏數量詞對某些句法結構確實起着某種制約作用。如果我們再高度概括一下，可以作出這樣的推斷：一定的語法範疇（數量範疇就是其中的一個）對一定的句法結構都會起着一定的制約作用。這裏我們不妨再以領屬範疇對漢語句法結構所起的某種制約作用作為佐證。

5.1 必須倚賴領屬關係的句法組合。

按照朱德熙先生的關於動詞性詞語VP（包括以動詞性成分為謂語的主謂結構）加“的”構成“的”字結構的歧義指數公式，歧義指數為0的“VP + 的”不能再指稱事物，當這種“的”字結構作定語時，不能再形成同位性偏正結構，只能形成非同位性偏正結構。17 一般說是這樣，但是有例外。例如“孩子考上北京大學的”和“我撕掉了封面的”這兩個詞組，按朱先生的歧義指數公式
計算，歧義指數都為 0，但是它們可以分別跟 “家長” 和 “書(或雜誌)” 組成同位性偏正結構，分別指稱家長和書(或雜誌)。例如:

(1) 孩子考上北京大學的(家長)請會後留下。
(2) 我撕掉了封面的(書)是我不喜歡的書。

這種例外能成立的一個很主要的條件就是受 “的” 字結構修飾的名詞(如例(1)的 “家長” 和例(2)的 “書”)跟 “的” 字結構中代表動詞V的一個向的名詞(如例(1)的 “孩子” 和例(2)的 “封面”)之間有領屬關係(“家長的孩子” “書的封面”)。

跟上述情況相類似的，由形容詞作謂語的主謂結構加 “的”構成的 “的” 字結構 “N + A + 的” (N代表名詞)，能跟另一個名詞N'組成同位性偏正結構，並能指稱那個作中心語的名詞N'，其前提也是作中心語的名詞N'跟 “的” 字結構裏的名詞N之間有領屬關係。例如:

個兒高的(運動員)     「運動員的個兒」
葉子圓的(楓樹)       「楓樹的葉子」
色兒紅的(月季花)     「月季花的色兒」
力氣大的(男同學)     「男同學的力氣」
穿着講究的(姑娘)     「姑娘的穿着」

再如，一般說受事主語句的謂語動詞後面不能再帶受事實語，如 “衣服洗了” 是受事主語句，“洗” 後面不能再帶受事實語。但也有例外。例如:
衣服只洗了領子。
那橘子已經剝了皮了。
那條狗打斷了一條腿。
那蝴蝶被扯掉了一個翅膀。

例外的前提是作主語的名詞和作賓語的名詞之間有領屬關係(衣服的領子，橘子的皮，狗的腿，蝴蝶的翅膀)。

5.2 排斥領屬關係的句法組合。

現代漢語裏，大，小主語之間有施，受關係的主謂語句有兩種格式：

A. NP[受] + NP'[施] + VP
   那電影我們看過了。
   酒我買了。
   下個月的報紙你訂了嗎？
   那衣服她都洗了。

B. NP'[施] + NP[受] + VP
   我眼鏡丟了。
   我們英語還沒考呢。
   你電影到底看不看？
   小張試驗報告早交了。

A式的使用頻率比B式高得多。這是因爲B式在使用上要受到許多限制，其中很重要的一條，NP[受]不能是一個領屬性偏正結構，如果是領屬性偏正結構，只能用A式，不能用B式。例如:
(1) 小王的書我丟了。(A)
*我小王的書丟了。(B)
(2) 你的衣服小劉都洗了。(A)
*小劉你的衣服都洗了。(B)
(3) 爸爸的大衣我拿着呢。(A)
*我爸爸的大衣拿着呢。(B)
(3) 我的辭海老張借去了。(A)
*老張我的辭海借去了。(B)

這說明，在 "NP'[施] + NP[受] + VP" 這種格式中，NP[受]排斥領屬性偏正結構。

再如，前面我們曾指出，表示 "給予" 義的雙賓結構中，間接賓語為人稱代詞時，直接賓語不一定非得 "數 - 量 - 名" 結構，可以是單個兒名詞(§ 3.4)。但是，我們看到，那直接賓語不能是一個領屬性偏正結構。試比較：

送他衣服         送他皮的衣服         *送他我的衣服
給你書           給你新出的書           *給你王老師的書
還我鋼筆         還我新的鋼筆           *還我媽媽的鋼筆

很明顯，這種雙賓格式中的直接賓語並不一般地排斥偏正結構，而是只排斥領屬性偏正結構。上面打 * 的例子得分別說成：

(把)我的衣服送他
(把)王老師的書給你
(把)媽媽的鋼筆還我
5.3 以上事實充分說明，一定的語法範疇對句法起著一定的制約作用。關於這個問題，我們過去還沒少注意。在一個語言裏邊，具體說在漢語裏邊，到底有多少種語法範疇對句法起著制約作用，制約的範圍有多大，其制約作用的具體表現又是如何，當兩種或多種的語法範疇同時對句法結構起著制約作用的話，其不同制約作用之間的關係如何，這不同的制約作用是否有不同層面的區別，諸如此類的問題都很值得我們去探討。我認爲，探討一定的語法範疇對句法的制約作用，必將有助於漢語語法研究的進一步深入，也將有助於我們對語法研究中意義與形式相結合這一問題的進一步認識。

§6 附言

有一個似乎跟本文無關的問題想在這裏提一下，那就是現代漢語裏的“把”字句為什麼用得那麼多。這是早為語法學界所關注並已對它有過大量論述的問題。我並不想在這裏深入討論這個問題，只是覺得這個問題跟本文談到的有些內容不無牽連，所以想附帶在這裏說幾句。

前面我們曾分別講到，(1) 在雙賓結構裏，如果間接賓語是表示跟行為動作相關的人或事物位移的處所賓語，那末直接賓語一定得帶數量詞，否則就不能成立，如不說“攔碗裏豆”(§2.1); (2) 在表示“給予”義的雙賓結構裏，如果間接賓語是個名詞，直接賓語不帶數量詞的話，所形成的雙賓結構是粘着的，如“給隔壁奶奶帶魚”不能單獨成句(§3.4); (3) 在表示“給予”義的雙賓結構裏，如果間接賓語是個人稱代詞，直接賓語可以是不帶數量詞的名詞性成分，但是不能是一個領屬性偏正結構，如不說
“送他我的衣服” (§ 5.2); (4) “動詞 + 了 + 名詞” (名詞前不帶數量詞) 是個粘着的句法結構，如 “吃了蘋果” 就不能單獨成句 (§ 3.1); (5) “NP[施] + NP[受] + VP” 這一主謂謂語句格式中，NP[受] 不能是個領屬性偏正結構，如不說 “小劉你的衣服都洗了” (§ 5.2)。值得我們注意的是，不能由這些不成立或不自由的句法組合來表達的意思要用一個能成立的，自由的，意思又不大的 Vermont 句子格式來表達的話，那末所選用的最理想的句法格式大概就是 “把” 字格式了。試看：

(1) 把黃豆攤碗裏
    把水倒缸裏
    把石頭扔河裏
    把槍埋地底下

(2) 把帶魚送隔壁奶奶
    把油畫送學校

(3) 把我的衣服送他
    把王老師的書給你
    把媽媽的鋼筆還我

(4) 把蘋果吃了
    把衣服洗了
    把菜切了

(5) 我把小王的書丢了
    小劉把你的衣服都洗了
    我把爸爸的衣摺手工把
    老張把我的辭海借去了

這些事實是不是將會為 “把” 字句為什麼用得那麼多這一問題多提供一個答案?
附注：

(1) 馮世澄(北京大學中文系)和見繼周(社會科學院語言研究所)二位先生(均係北京人)幫助審訂了本文若干例句，謹在此深致謝。

(2) 分別參看朱德熙《語法講義》§4.13.2，商務印書館，1982年，北京；陸儉明《周頌性主語句及其他》，《中國語文》1986年第3期；李臨定，范方蓮《試論表示“每”的數量結構對應式》，《中國語文》1960年11月號。

(3) (4) 參看馬慶株《現代漢語的雙賓構造》，《語言學論叢》，第十輯，商務印書館，1981年，北京。

(5) 參看朱德熙《語法講義》§8.8.3。

(6) 參看朱德熙《現代漢語形容詞的研究》，《語言研究》1956年第1期。該文又見於朱德熙《現代漢語語法研究》，商務印書館，1980年，北京。

(7) 呂叔湘先生稱之為“非謂形容詞”，參看呂叔湘，饒長衝《試論非謂形容詞》，《中國語文》1981年第2期；朱德熙先生稱之為“區別詞”，參看朱德熙《語法講義》§4.14。

(8) 參看朱德熙《現代漢語形容詞的研究》。

(9) 參看朱德熙《說“的”》，《中國語文》1961年12月號，該文又見於朱德熙《現代漢語語法研究》。

(10)“多蘋果”“少蘋果”作爲述賓結構可以成立，作爲偏正結構不能成立。

(11) 參看陸儉明《“多”和“少”作定語》，《中國語文》1985年第1期。

(12) 參看朱德熙《語法講義》§1.1.2。
(13) 有例外，當名詞為“這/那+名詞”或人稱代詞“他(它)”時，可單獨成句(限於祈使句)。例如：“扔了這/那破鞋!”“喝了它!”

(14) 表示容納量的D類施事賓語句，去掉其中的數量詞，整個結構根本就不成立(*這鍋飯可以吃人 *這瓶酒喝不了人)。

(15) 參看朱德熙《論句法結構》，《中國語文》1962年8，9月號，該文又見於朱德熙《現代漢語語法研究》。

(16) 參看馬希文《跟副詞“再”有關的幾個句式》，《中國語文》1985年第2期。

(17) 參看朱德熙《“的”字結構和判斷句》(上)，《中國語文》1978年第1期，該文又見於朱德熙《現代漢語語法研究》。朱德熙先生關於動詞性結構DJ(朱文原用符號)加“的”形成的“的”字結構“DJ的”的歧義指數公式是: \( N - M = P \)。其中N代表動詞D的“向”的數目，M代表在DJ裏出現的體現動詞D的“向”的名詞的數目，P代表“DJ的”的歧義指數。按朱文的看法，如果N為2，M為0，P為2時，“的”字結構“DJ的”可以指稱動詞的兩個“向”，即指稱施事和受事；如果N為2，M為1，P為1時，“DJ的”只能指稱動詞的一個“向”，即指稱施事或受事；如果N為2，M為2，P為0時，“DJ的”不能再指稱事物，它修飾名詞的話，只能形成非同位性偏正結構，即“DJ的”不能指稱整個偏正結構。

(18) 參看陸儉明《“的”字結構和“所”字結構》，《語法研究和探索》(1)，北京大學出版社，1982年，北京；該文又見於陸儉明，馬真《現代漢語虛詞散論》，北京大學出版社，1985年，北京。

(19) 帶*記號的例子(包括例(4))是可以成立的，但都不能單獨成句，即都不能單說。

1987年1月於美國哥倫布市
Formalism, Functionalism and Chinese Syntax

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1. A Brief Background

Modern linguists have been trying hard to make a science out of the study of language. As early as in the 1870's, Neogrammarians, notably represented by Hermann Paul, claimed that the only scientific approach to the study of language is found in the area of historical linguistics. The rigid procedures, generally known as sound laws, which they used in the reconstruction of the proto-languages at various stages seemed to justify their claims, for those sound laws enabled them to account for various types of sound changes in a precise and consistent way. This was certainly a great accomplishment when compared with the previous unsystematic, haphazard explanation based on vocabulary agreement in different languages. As some sound laws, e.g. Saussure's laryngeal theory and Grassmann's Law, were formulated on the basis of the sound structure of the language involved, linguistic scholars soon extended their attention to the structure of the language in general. It is then that, while arguing that language can also be studied systematically on a synchronic basis, Saussure came up with a number of succinct definitions on several important notions concerning language such as diachronic vs. synchronic, *la langue* vs. *la parole*, syntagmatic vs. associative, etc., and laid the foundation for structuralism. Among these notions the syntagmatic-associative pair referred to the formal relationship, and was actually the pioneering work for modern syntax. American structuralists, Block, Hockett, Gleason, Fries, and others, subsequently advanced the study of syntax by pointing out the difference between a syntagmatic relationship and a hierarchical relationship. The first serious attempt to formalize the structure of a natural language was that of C. C. Fries (1942). In *The Structure of English*, Fries made a daring move by using numbers to stand for several important grammatical categories, for example, '1' was used to stand for the noun, '2' for the verb, '3' for the adjective, and '4' for the adverb, etc. Thus an English sentence may be represented by a few numbers, and the same series of numbers may stand for hundreds of sentences in the language. Fries obviously recognized the fact that formalism is an extremely powerful device, and yet he apparently ignored the converse, viz., that the same formal device
will also generate a huge number of unacceptable sentences as well. Perhaps for this reason his formalization of the structure of English did not catch fire. It was not until 1957, when Chomsky's *Syntactic Structures* became known, that the effort to formalize the structure of language was revitalized; this time it did catch fire, and the fire has spread worldwide.

2. Chomsky's Linguistic Theories

From 1957 to 1983 Chomsky changed his position on linguistic theory several times. Those changes represented several different stages now generally referred to as the Earliest Transformational Theory, the Standard Theory, the Extended Standard Theory, the Revised Extended Standard Theory, and the Theory of Government and Binding. The detail of those changes is not our main concern here. To summarize, in 1957 Chomsky proposed a tripartite arrangement for his transformational grammar: phrase structure rules, transformational rules, and morphophonemics. It was this proposal that revolutionized the linguistic field. Hundreds of different languages were studied within this framework, but it was soon discovered that both phrase structure rules and transformational rules were too strong because they generated many unacceptable sequences of words as well. To remedy the situation Chomsky added selectional restrictions in the base component and constraints on the application of transformational rules in the Standard Theory. In the meantime, he adopted the notion of deep structure which had been suggested to him by Katz as the sole semantic representation. Within this model, transformational rules do not carry any meaning-changing elements, and their function is simply to map the deep structure of a sentence onto its surface structure. But, before long, Chomsky realized that the presupposition of a sentence is tied to the topic structure of that sentence, and that quantification and anaphora do not obey transformational rules, and must be determined on the surface structure level. So Chomsky shifted from his earlier position that only deep structure determines the semantic representation to a new position that both deep and surface structures contribute to the meaning. By the mid-1970's, Chomsky proposed trace theory in which the role of deep structure is further reduced. It is now the surface structure which determines everything—the semantic representation as well as the phonetic representation. In his most recent theory, the Theory of Government and Binding, Chomsky proposes some new formal devices, such as the empty category, PRO, variable, and the trace marker, and argues that those items must be properly governed. The new theory involves a number of subtheories including bounding theory, government theory, binding theory, Θ-theory, control theory, case theory, etc. All these interact
FORMALISM, FUNCTIONALISM AND CHINESE SYNTAX

to explain complex phenomena of language. That is why his new theory is
sometimes labelled as a modular theory, which may be decomposed into
many subtheories.

While Chomsky has thus offered a thorough-going structural approach
to linguistic phenomena, the failure of structuralism to explain all the
complexities of language has led to proposals for a functional approach.

3. The Functional Approach

Lyons (1977:249) pointed out that structuralism was originally associated
with functionalism, especially in the work of the Prague School.

(1) By 'functionalism' is meant the view that the structure of every
language-system is determined by the particular functions that it
has to perform. Since certain human and social needs are
universal, there are certain functions that all languages are called
upon to fulfill; and these will tend to be reflected in their
grammatical structure. For example, in all societies, there are
occasions when it is necessary to make descriptive statements, to
ask questions and to issue commands; it is therefore that most
languages should distinguish grammatically between declarative,
interrogative and imperative sentences.

Chomsky (1965) also pointed out that 'subject' as a functional notion can
be defined as a relation between the noun phrase and the sentence, and that
'object' as a relation between the noun phrase and the verb phrase. He
successfully demonstrated that these types of functional notions can be
formally defined in terms of a tree diagram or a bracketing system. Fillmore
(1968) challenged Chomsky's claim by pointing out that prepositional phrases
in English may carry a variety of distinctive functions such as agentive, dative,
instrumental, objective, directional etc., and that these functions cannot be
formalized without losing their respective functions. From this Fillmore
developed his well-known case grammar. Linguists began to realize that
there is no one-to-one relation between form and function. One form may
have many functions, and one function many forms. A few years later Kuno
(1975, 1976) argued that there is crucial empathetic interaction with syntax
which determines the acceptability of certain sentences. Kuno labelled his
approach 'functional' and argued that syntactic phenomena are sometimes
controlled by nonsyntactic factors and that formal approach would fail when
semantic factors do not show one-to-one correspondence with syntactic
factors. Kuno’s claim was further strengthened by Brian Joseph’s (1976) discussion on the English verb ‘envy.’ Joseph claimed that the acceptability or the unacceptability of the following sentences can be best explained by Kuno’s Empathy Hierarchy, not by syntactic rules:

(2) a. I envy John the girl whom he married.
   b. *I envy John the girl who married him.

As more and more evidence against formal approach appeared in the literature, linguists began to realize that formal syntax is inadequate to account for semantic phenomena. In order to understand fully the meaning of an utterance, we need to know at least three types of meaning: lexical meaning, structural meaning, and contextual meaning; the latter is known as pragmatics. Since pragmatics can be defined as the study of how utterances have meaning in situations, and since situations may vary and have really no upper ceiling, Chomsky’s efforts to formalize the description of language breaks down because so far he has not included context in his theories. On the other hand, the functional approach is often used to explain problems contextually, e.g. the formulation of a view of meaning in terms of illocutionary force by Austin (1962) and by Searle (1979), and the explication of ‘meaning’ in terms of the Cooperative Principle and Politeness Principle by Grice (1981). With this development, linguistic scholars are facing a dilemma: apparently they must choose between formalism and functionalism, neither of which is fully satisfactory. If they choose the former, they will not be able to give a full account of the meaning of the utterance, and if they choose the latter they might as well forget about making a science out of the study of language since pragmatics apparently cannot be formalized.

4. Chinese Syntax

In the study of Chinese syntax, formalization began with William Wang (1964, 1965). Wang’s two pioneering articles laid foundation for transformational treatment of Chinese syntax. Within the next decade, a group of brilliant scholars published explorations of many different aspects of the Chinese language. They all adopted formal approach, some employed the Aspects Model, others preferred the Generative Semantics Model, and still others the Case Grammar Model. The appearance of Chao’s work, A Grammar of Spoken Chinese (1968) was an extremely important factor in the advancements of the decade. Chao, as a structuralist, collected a huge number of examples from spoken Chinese, organized them systematically into patterns, and discussed them from an empiricist’s point of view. Although he
did not mention the level of deep structure in his book, or posit any transformational rules for structurally-related constructions, he did mention the distinction between a logical subject and a grammatical subject, and in many instances he even included a situational interpretation for the utterance in question. The rich materials and insightful discussions that Chao offered in that book made the book immediately an indispensable source for all the researchers in the field. Even now most linguists would agree that Chao’s book represents a milestone for descriptive linguists, and that its influence will be far-reaching.

From 1965 to 1975 there were several things worth mentioning in the study of Chinese syntax. First, most linguists in the field accepted the notion of deep structure as the semantic representation of a sentence under discussion. In spite of the fact that different frameworks would generate different deep structures which, in turn, would require different sets of rules, the basic approach was transformational. In other words, all linguists then adopted a mentalistic approach, applying transformational rules to turn a deep structure into a surface structure. Second, different identity conditions in the deep structure were often cited as the answer for the distinction between two seemingly similar surface structures, e.g. Anne Hashimoto’s (1965) account of the distinction between chi-wan and chi-bao, two resultative verb compounds in Chinese. Third, syntactic co-occurrence restrictions were widely used in deriving complex constructions, e.g. A. Thompson’s (1973) use of the potential marker de as a criterion to determine whether two verbs may be joined to form a resultative verb compound. One also finds all these devices in Teng (1973), Tai (1973a, 1973b) and many others.

The study of Chinese syntax made great advances during this period. However, from 1976 on, the climate was no longer favorable to transformational approach, mainly because linguists realized that semantics cannot really be separated from syntax, and that semantic problems cannot be solved by a syntactically-oriented formal approach alone. Leading the charge, Li and Thompson (1976) claimed that the structure of Chinese can be best explained by taking the notion of topic as basic. Previously, linguists focussed their attention on the analysis of the structure of sentence, and now their attention seems to be shifted onto the analysis of discourse. Problems concerning deletion rules, anaphora relationships, and quantification cannot be easily explained with purely transformational approach. Lu (1977) argued that resultative verb compounds in Mandarin Chinese can be best accounted for by semantic criteria, not by syntactic criteria. Since then, functional approaches have become more and more visible in the study of Chinese syntax. many semantically-related notions such as presupposition,
implication, quantification, intension and extension, etc., have been discussed. Some scholars even became interested in situational analysis. Teng (1985), for example, discussed the time structure of Chinese verbs using the four types of situation suggested by Vendler (1967). J. Tai (1984) also discussed similar problems. These examples indicate that linguists in the field can no longer feel satisfied with any linguistic theory which deals only with sentence structures in a natural language. They have taken into consideration lexical semantics as well as pragmatics, and these two areas of meaning are rapidly becoming topics in the study of linguistics.

5. Some Concluding Remarks

The recent history of linguistics can be described in terms of successive expansions. To the generation which followed Bloomfield, linguistics meant phonetics, phonemics, and morphophonemics, but syntax was considered so abstract as to be beyond the horizon of study. All this changed after Chomsky discovered the centrality of syntax; but like the structuralists, he still regarded 'meaning' as too messy for serious contemplation. In the early 1960s Katz and Fodor began to incorporate 'meaning' into a formal linguistic theory, but Lakoff and others were soon arguing (1971) that syntax could not be separated from context. So 'pragmatics' has become a major topic for linguistic study. Thus, focus shifted from syntax to semantics, and methodology from formal to a functional approach. It seems that we must keep something of the formal approach if we still hope that some day we will be able to treat the study of language as a science. On the other hand, we need the functional approach to tackle the problems of situational meaning. So, how to incorporate these two approaches into one unified linguistic theory will probably be the most urgent task in the study of linguistics for some time. In this respect, the study of Chinese syntax will certainly help, because basic linguistic theory should apply to all languages regardless of differences in sentence structures.

Notes

1. I am indebted to Charles W. Swain and Frank Hsueh for their many valuable comments and suggestions toward the earlier version of this paper.
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Toward A Cognition-Based Functional Grammar of Chinese

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0. Introduction

In this essay, I take the position that the fundamental function of language is to communicate ideas and that grammatical structures arise from the symbolization of reality. A non-objectivist philosophy which falls in between linguistic objectivism and linguistic relativism is proposed. My aim is to understand the structural principles of Chinese in terms of some basic human cognitive abilities pertaining to time and space in conjunction with general principles of communication. I follow a view shared by many cognitive psychologists and philosophers that the fundamental human perceptual strategies of time and space primarily result from the structure of the human body in its interaction with the physical world. It is demonstrated that the proposed approach allows the grammar of Chinese to be analyzed independent of grammatical categorization based on European languages. Different from the prevailing practices in syntax, I focus on linguistic disparities rather linguistic similarities as starting points to construct a grammar which is capable of revealing the underlying conceptual principles unique to the Chinese language. Those conceptual principles include an extension of Tai's (1985) temporal sequence principle, the whole-part relation, metaphorization based on spatial expressions, the salience principle, and the principle involving the notion of 'information center.' In essence, I propose a philosophy, a method, and a new approach to grammatical analysis for Chinese, which I hope can be applied to other languages as well.

In Section 1, I present a non-objectivist philosophy of grammatical analysis in which surface syntactic structures are taken to represent semantic structure directly, and semantic structures are equated with conceptual structures. Section 2 uncovers the conceptual principles underlying Chinese sentences expressing locations and spatial relations. Section 3 explicates the explanatory value of Tai's temporal sequence principle in Chinese word order in conjunction with some putative functional principles. Section 4 deals with those temporal expressions which can be analyzed in light of the metaphorization of spatial expressions; the notion of temporal for Chinese
word order; some systematical differences between Chinese and English regarding time as a spatial metaphors are made. In Section 5, I draw a few conclusions, suggesting a way to search for language universals by means of the proposed non-transformational cognition-based functional theory of grammar.

1. A Non-Objectivist Philosophy

Language is the main vehicle of human communication. In speaking, we put ideas into words to convey to other people what we do, feel, see, think and intend to do. In listening, we turn words into ideas to grasp what other people want us to know about their actions, feelings, perceptions, thoughts and intentions. Insofar as the fundamental, if not the sole, function of language is to communicate ideas, the central inquiry in linguistics should center around the comprehensive question about the relation among language, thought, and reality. Yet, the fundamental function of language in human communication has virtually been ignored in the mainstream of modern structural linguistics, from Saussure to Bloomfield and then to Chomsky. As pointed out by Hsieh (1978), the study of the symbolization of reality by language has in general been more enthusiastically pursued by anthropologists, philosophers, and psychologists than by linguists. With the rare exception of Benjamin Whorf, linguists have shunned away from the study of language as a symbolic system capable of reflecting culture.

Very recently, however, several linguists including Haiman (1985, 1986), Lakoff (1987), and Langacker (1987) among others have begun to take Whorf's view of language as a symbolization of reality more seriously. They attempt to redirect the current dominant thinking in grammatical theories by arguing that grammar is not an arbitrary and autonomous formal system, but inherently a symbolic representation of conceptualized reality. They have in different manners demonstrated that significant generalizations and natural explanations for linguistic structures, particularly syntactic structures, can be obtained only by looking at the language as a symbolization of the conceptual content structured according to cultural convention in a given society. This essay is an attempt to show that significant generalizations of great explanatory value in Chinese grammar can be obtained only by viewing the unique characteristics exhibited in this grammar as reflecting Chinese conceptualizations of reality.

In the tradition of structural linguistics, language is an arbitrary, autonomous, and self-contained formal system of rules. Therefore, it
suffices to investigate the formal structure of the human language without
taking into consideration its function in human communication. Inheriting
this fundamental assumption from the American structualist tradition,
Chomsky makes a further claim that this system of rules (modules and
principles in his government and binding theory) universally underlies all
human languages and reflects human innate language faculty. In particular,
this innate language faculty is independent of other systems of cognition in
human beings, including the perceptual system. Thus, to Chomsky and his
followers, it is through the construction of abstract principles governing all
human languages, particularly syntactic principles, that we can hope to bring
to light some inherent properties of the human mind, or more concretely, the
human brain. Chomsky's innateness hypothesis has profound impact on
various contemporary philosophical and psychological issues concerning the
nature of human beings. Admittedly, his approach to studying the innate
system underlying human languages has greatly widened the vision and
purview of linguists and has led to the discovery of some fundamental
universal properties of human languages. However, it has also steered the
efforts of the majority of linguists in the past two decades away from looking
into different languages as representing different systems of
conceptualization of the real world. One of the fundamental tenets held
firmly by GB practitioners is that once we analyze one single language, i.e.,
English, in great detail to discover the abstract principles governing English
grammar, given the innateness hypothesis, we can assume they probably
would also exhibit in other human languages including Chinese. However
the differences between Chinese and English we may find, they can be
accounted for by fixing a small set of parameters in the universal 'core
grammar.' These parameters, in the form of abstract formal principles, are
also innate. They have nothing to do with different conceptualizations of
reality in different cultures.

In addition to Chomsky's GB theory, several other formal grammatical
theories have been developed in this country during the past two decades.
Because of the limit of space, we will not be able to evaluate each of them.
For the purpose of clarifying the central issue at stake, it suffices to mention
Categorial Grammar, which has evolved from Montague Grammar in recent
years, and other grammars which are based on truth-conditional semantics
and model-theoretic semantics. Truth-conditional semantics holds that to
understand the meaning of a sentence is to know what the world would have
to be for the sentence to be true; model-theoretic semantics is a method to
carry out the program of truth-conditional semantics. It involves the
construction of abstract mathematical models of those things in the world
making up the semantic values of expressions in the object language. Truth-
conditional semantics and model-theoretic semantics together give a rigorous and elaborate account of semantics and syntax at the same time. They represent an elegant approach to characterize human communication by language. Formally elegant and rigorous as they are, they have implicitly or explicitly adopted a correspondence theory of meaning, truth, and knowledge. They assume that words are arbitrary symbols which are meaningless themselves and are made meaningful only by being associated with things in the world. They also assume that rational reasoning involves the algorithmic manipulation of arbitrary abstract symbols in the mathematical sense. Indeed, this kind of correspondence theory of meaning has dominated the Western philosophical tradition since the 19th century.

Very recently Johnson (1987) and Lakoff (1987) have referred to this dominant Western philosophical tradition as 'objectivism' and 'objectivist cognition,' since this tradition regards meaning as an abstract relation between symbolic representations and the objective reality, and since it doesn't properly recognize the role of human experience, imagination, and creativity in our understanding of reality. From the viewpoint of human communication, while the truth-conditional semantics and model-theoretic semantics have provided a rigorous model of human communication regarding the physical objects in the world, their objectivist view has neglected human's endowed ability to conceptualize the same situation in different ways, according to different conceptual systems underlying different languages in different cultures. Johnson and Lakoff have stopped short of referring to Chomsky's theory as an objectivist view of cognition. However, Chomsky's theory treats language differences as resulting from various ways of selecting a small number of innate parameters rather than from different conceptualizations of reality. To that extent, it stands on the very foundation of an objectivist cognition. In this essay, we strongly object to the paradigm of objectivist cognition; we agree with Langacker (1987) that meaning is not equated with truth condition but with cognitive processing, i.e., construing of the objective reality by means of conventional imagery, and that grammatical structure embodies conventional imagery. Therefore, we contend that different cultures have different linguistic semantics and consequently have different grammatical structures. We will demonstrate that this relativist view of linguistic semantics can lead us to many revealing and natural analyses of Chinese, especially in those areas where Chinese is drastically different from English.

Due to the objectivism underlying the tradition of linguistic analysis on the one hand, and the absence of an indigenous Chinese grammar on the other, research on Chinese grammar since Mashi Wentong in 1898 has
invariably been based on grammatical theories derived from studies on Indo-European languages. The influence of American grammatical theories, traditional or contemporary, is particularly notable. It is no accident that Chinese grammarians have relied heavily on English translations and on grammatical theories of English to analyze Chinese. It is not surprising at all that the result of this objectivist approach shows that Chinese and English are fundamentally not different in grammatical structures. For this translation-and-analysis approach assumes that Chinese and English are not different in semantics. It is only when Chinese grammarians are faced with some obvious distinctive characteristics of Chinese grammar which resist a Western method of analysis that they begin to question the validity of the method. The wholesale application of the 'parts of speech' is a case in point. Since Chinese lacks morphology, the 'parts of speech' can at most be understood notionally or in terms of grammatical functions. Thus, the category of 'coverb' in place of the category of 'preposition' is introduced to account for the apparent different behaviors between English prepositions and their supposed equivalents in Chinese. English predicative adjectives is recognized as stative verbs in Chinese, since they require no co-occurrence of the copula verb 'to be.' In spite of these and other similar modifications in grammatical descriptions, Chinese grammarians have largely relied on theories developed for European languages, particularly English. They have not even attempted to obtain a framework of analysis which is neutral and unbiased for the analysis of all natural languages. It is not trivial at all to point out here that since translations from Chinese to English in general encounter no grave obstacles, very few Chinese grammarians have shown even the slightest hesitation in relying on translation. There is nothing wrong with using translation as a heuristic device. What is objectionable is that Chinese grammarians, including current GB practitioners, have simply superimposed English structures on Chinese sentences viewed as English translation. The result is, not surprisingly, that Chinese appears to exhibit essentially the same properties as English.

In this essay, we wish to develop an approach largely independent of Western grammatical traditions and theories, an approach that will allow us to look at Chinese sentences as they are, without the veil of English translation. This approach will enable us to uncover the conceptual system underlying Chinese grammar and thereby to see in what respects the Chinese conceptual system is similar to and in what respects it is different from the conceptual system underlying English grammar. Since the proposed approach is based on a non-objectivist view which recognizes culturally-dependent linguistic semantics which provide motivations for the structural principles governing Chinese grammar, we will hereafter refer to this approach as
"non-objectivist view" of Chinese grammar. This non-objectivist view is unbiased and indeed objective in that it frees the analysis of Chinese grammar from the confinement of Western theories, and in that it interprets grammatical structures of Chinese in terms of basic human perceptual abilities, especially with respect to space and time. However, in strategy, we will use language disparities rather than similarities as our starting point. In doing so, we will be able to use grammatical features unique to Chinese as an orientation point to uncover conceptual principles unique to this language. The present approach is thus radically different from the currently dominant linguistic paradigm not only in its fundamental philosophical assumption, as delineated above, but also in the focal points of research. It should be made clear that our emphasis on language disparities between Chinese and English does not mean that we deny the importance of language universals or the research undertaken to discover them. On the contrary, we deliberately adopt an inductive approach to arrive at language universals by exhausting language particulars in a systematic manner. More significantly, language universals to be uncovered, like languages particulars, should bear a direct and natural relationship to the human's basic and common cognitive abilities in space and time. It should also be made clear here that we do not wish to contend against Chomsky's innateness hypothesis. We simply view the hypothesis as an empirical question rather than an a priori philosophical assumption. If eventually we are faced with language universals which cannot be reasonably accounted for in terms of general cognitive capabilities, we may have to contemplate the possibility of treating them as innate. We believe this kind of inductive and empirical stance will avoid many current disputable points in Chomsky's innateness hypothesis.

The proposed non-objectivist view of Chinese grammar starts with a search for consistent patterns exhibited at the very surface of the Chinese language and therefrom to impute some conceptual principles capable of explaining the observed patterns in a natural and revealing manner. Consider the following example discussed in Hsieh (1978),

(1) 她嫁錯了人。
    Tā jià-cuò-le rén.  
    'She has married the wrong guy.'

(1) illustrates a systematic difference between Chinese and English in describing the making of mistakes. While Chinese has the pattern Subject Verb-wrong Object, English has the pattern Subject Verb Wrong-object. It is obvious that while the word cuò in Chinese is the second element of the
resultative compound indicating the result of an action, the word wrong in English is an adjective modifying the object noun. If one takes an objectivist approach and assumes Chinese and English have the same conceptualization of making mistakes, one would perhaps feel comfortable in assuming that Chinese and English have the same deep structure for sentence (1), and their superficial difference results from the interaction of different principles or parameters the two languages have chosen. Although we have so far not seen any account of the grammatical difference in question by GB practitioners, given the rich mechanisms in GB theory, it may not be a very difficult task. On the other hand, if we take a non-objectivist approach, we can immediately see the difference in (1) as the grammatical embodiment of two different conceptual systems which are equally effective. As suggested by Hsieh, Chinese speakers attribute the mistake to the action which the subject performs; English speakers perhaps are merely reporting a discrepancy between the person she set out to marry and the person she has actually married. It is important to note here that Hsieh’s explanation need not be taken within the context of the infamous Whorfian linguistic relativity hypothesis. It is not necessary for us to go beyond Hsieh’s explanation by further proposing that the conceptual difference in question is attributable to different value systems possessed by Chinese and English cultures. In other words, we do not wish to correlate this conceptual difference with the popular misconception that in Chinese culture people tend to blame themselves for mistakes, while in English culture people tend to blame others. This particular example serves to illustrate an important demarcation between the present non-objectivist approach and the kind of linguistic relativism often attributed to Sapir and Whorf.

The contrast between objectivist and non-objectivist approaches in grammatical analysis can be further illustrated by the treatment of duration expressions in Chinese. Consider,

(2) *他念了书三个钟头。
* Tā niàn-le shū sāngé zhōngtóu.
he read-asp.book three hour
'He read books for three hours.'

(3) 他念书念了三个钟头。
Tā niànsū niàn-le sāngé zhōngtóu.
he read book read-asp. three hour
'He read books for three hours.'
Sentences (2)-(4) show that Chinese and English are different in structuring duration expressions. While the pattern exhibited in (2) is grammatical in English, it is not acceptable in Chinese except under certain conditions. In contrast, the patterns in (3) and (4) are grammatical in Chinese, but odd in English. The phenomenon has recently intrigued a number of Chinese syntacticians working within the GB framework. In particular, Huang (1982, 1988) claims that sentences like (2) violate a general phrase structure condition (PSC) to the effect that in Chinese the head of VP can only branch to the left once, and only at the lowest level of expansion. Sentences (3) and (4) are therefore syntactically motivated to conform to the PSC. However, as has been recently shown by Tai (1988), verb-copying in sentences like (3) is independent of the PSC, and is both semantically and functionally motivated. We will not present Tai's arguments here. Instead, we would like to point out that to derive (3) and (4) from (2) is to assume that Chinese and English have the same conceptual plan for construing duration expressions, and therefore to follow an objectivist approach. However, with a non-objectivist view, we can treat (3) and (4) as representing two natural ways of conceptualizing duration expressions in relation to the verb, rather than as some sort of 'distorted' structure resulting from well-formedness conditions in Chinese grammar. Thus, the verb-copying in (3) reflects an iconic representation for durative actions and states. The structuring of duration expressions as a nominal modifier represents another natural way of conceptualizing temporal expressions to measure the duration of an event. The naturalness of this kind of construing can be more clearly seen in sentences like 4

(5) 他走了三天的路。
Tā zǒu-le sān tiān de lù
'He walk-asv three day de road
'He has travelled for three days.'
(6) *他念了三个钟头的那本书。
*Tā niàn-le sān gé zhōngtóu de nèibēn shū
  he read-asp three hours de that book
  'He has read that book for three hours.'

(7) *他走了三天的那条路。
*Tā zǒu-le sān tiān de néitài lù
  he walk-asp. three day de that road
  'He has travelled on that road for three days.'

It should be obvious that the ungrammaticality of (6) and (7) is due to the fact that the referential function of 'that book' and 'that road' precludes the metaphorical senses of 'book' and 'road' in (4) and (5). It seems to be unlikely that the contrast between the grammaticality of (4) and (5) on the one hand, and the ungrammaticality of (6) and (7) on the other, can be accounted for by GB or other formal grammatical theories in a non-ad hoc manner.

The syntactic phenomenon in question supports Lakoff and Johnson's (1980) theory that our conceptualization of the reality in many ways are metaphorically structured, and shows that the pattern in (4) and (5) are structured metaphorically. Moreover, it shows that grammar is not an arbitrary and autonomous formal system but embodies human conceptualization of the real world. It is important to note here that while current dominant grammatical theories including GB are interested in filtering the ungrammatical sentences such as (2), our aim is to find a natural explanation for the patterns illustrated in (3) and (4). Here again, the non-objectivist approach we have adopted allows us to find an effective way to uncover the Chinese patterns in question. Furthermore, it leads us to see the ungrammatical pattern in (2) in a refreshing different light. Consider the contrast between (2) and (8) in grammaticality:

(8) 我看了张三三个钟头。
Wǒ kàn-le Zhāngsān sān gé zhōngtóu
  I see-asp John three hour
  'I saw John for three hours.'

In (8), the duration expression is construed in the same manner as in English. Thus, the pattern, though not unique in Chinese, is another natural way of construing duration expression. It can be viewed as a manifestation of a natural sequencing of verb, object, and complement in that the object is closer to the verb than the complement. It follows a fundamental iconic principle of word order as observed by Bybee (1985), which can be stated to
the effect that constituents with a closer semantic relationship tend to be closer to each other in linear order. In light of the natural motivation for the pattern exhibited in (8), the ungrammaticality in (2) can be viewed as resulting from Chinese speakers' preference of (3) and (4) over (2) as duration expressions in cases where the object is indefinite and hence susceptible to metaphorization.

The non-autonomy of grammar and the role of metaphors in grammar can be further illustrated by the difference between (9) and (10) with respect to verb-copying.

(9) 他跳水跳了三个钟头。
Tā tiào shuǐ tiào-le sān gè zhōngtóu.
he jump water jump-asp three hour
'He has dived for three hours.'

(10) *他跳河跳了三个钟头。
*Tā tiào hé tiào-le sān gè zhōngtóu
he jump river jump-asp three hour
'He has jumped river for three hours.'

Syntactically, there is no reason why verb-copying should be disallowed in (10). (10) is ruled out because tiào hé is a metaphorical expression for committing suicide by jumping into the river, and therefore denotes an instantaneous change-of-state and semantically is incompatible with duration expressions. This can be further witnessed in

(11) *他跳了三个钟头的河。
*Tā tiào-le sān gè zhōngtóu de hé
he jump-asp three hour de river
'He has jumped river for three hours.'

In contrast, tiào shuǐ in (9) is compatible with duration expressions and therefore the verb tiào can be copied. For the same reason, (12) is grammatical.

(12) 他跳了三个钟头的水。
Tā tiào-le sān gè zhōngtóu de shuǐ
he jump-asp three hour de water
'He has dived for three hours.'
Finally, as elsewhere argued by Tai (1986), the conceptual basis for the pattern exhibited in (4), (5), and (12) is parallel to the use of classifiers in Chinese in that, whereas classifiers individuate objects (cf. Lyons 1977), duration and frequency expressions in Chinese are temporal devices used to individuate events. Thus, the non-objectivist approach again frees us from the bondage of the English structure and enables us to see the genuine conceptual basis shared by duration and frequency expressions and classifiers, another unique characteristic of Chinese grammar. This is the kind of generality that no GB rule will come close to construing.

The objectivist philosophy has misguided not only Chinese linguists who have worked within the general framework of formal grammars, but also those within the general framework of functional grammars. Consider another insightful example from Hsieh (1978):

(13) 车子来了。
Chēzǐ lái-le
bus come-asp
(a) 'The bus came;' (b) 'The bus has come;' (c) 'The bus is coming.'

Depending on the situation at hand, (13) can mean (a), (b) or (c) as indicated in the English translation in (13). Since it is generally assumed by Chinese grammarians that Chinese doesn't grammaticalize tense, only aspect, the (a) and (b) readings do not pose serious problems for the analysis of -le in Chinese. The (c) reading has, however, discouraged many Chinese grammarians from searching a unitary core meaning for the aspect marker -le. For example, Li and Thompson (1981), following the same objectivist approach by Comrie (1976) toward a general theory of aspect, have to turn to a rather abstract and complicated notion of 'bounded' rather than the simple notion of 'completion.' However, if the notion of 'completion' in Chinese is extended to the notion of 'having the situation under control,' as suggested by Hsieh (1978), it is then only natural for Chinese to use -le to describe the situations which are about to occur. In this respect, Japanese past tense -ka has the same conceptual scheme as -le in Chinese and can be used to indicate the imminence of a situation. It is important here to point out that 'having the situation under control' is a mental state, independent of the actual length of time in the real world. Thus, in Chinese, it is natural to use -le in situations like

(14) 我今年就毕业了。
Wǒ jīn nián wū yuè jiù bié-yè-le
I this year May soon graduate-asp
'I'll be graduating this May.'

(15)  他快五十岁了。
 Tā kuài wǔshí suī-lē
   he soon fifty year-asp.
   'He is approaching fifty.'

where the imminence of a situation can refer to an actual long stretch of time as in (15) for someone who is forty-six years old.

Another instructive example of misguidance by the objectivist approach in the research on Chinese grammar during the past quarter century can be found in the analysis of the well-known bā and bèi constructions as illustrated by

(16)a.  我打了张三。
 Wǒ dǎ-le Zhāngsān.
   I hit-asp John
   'I hit John.'

b.  我把张三打了。
 Wǒ bā Zhāngsān dǎ-le.
   'I hit John.'

c.  张三被我打了。
 Zhāngsān bèi wǒ dǎ-le.
   'John was hit by me.'

With some rare exceptions, Chinese linguists working within the general framework of formal syntax have related (16b) to (16a) either by moving the object to preverbal position with the insertion of bā as some kind of preposition or by embedding the plain SVO sentence under the causative bā as a higher predicate. The bèi sentence in (16c) is simply taken to be equivalent to the English passive, with the SVO sentence in (16a) as its corresponding active. Underlying this kind of analysis is the objectivist view which assumes that Chinese has the same grammatical notion of the active-passive correspondence as English. Yet, the fact that the bā and bèi constructions share many common semantic and syntactic properties and that both have a meaning of causation reveal that Chinese speakers use a different conceptualization scheme. It is clear that the bā and bèi constructions are both causatives from two different viewpoints but on the same plane in clear contrast with the non-causative SVO construction on a different plane. Thus, if we insist upon the existence of an active-passive relation in Chinese, the bā construction should be treated as the active and the bèi construction as
the corresponding passive. The SVO sentence is then neutral, being neither active nor passive. Furthermore, the existence of the bā and bèi constructions as causatives should not be regarded as an isolated phenomenon in Chinese grammar. It is related to other negative constructions and some important principles of Chinese verb semantics as discussed in Tai (1984). There is some evidence that the notion of agency is not inherent to the meaning of transitive action verbs in Chinese as it is in English. For example, in Chinese, the affected object can serve as the subject of a transitive verb without a passive marker or passive meaning as can be seen in

(17)  信念了。
Xīn xiē-le.
letter write-as.
'The letter is written.'

(18)  衣服洗了。
Yīfú xǐ-le.
clothes wash-as.
'The clothes are washed.'

As suggested by Tai (1984), while English looks at the ending point of an accomplishment or achievement verb from the viewpoint of agent, Chinese does it from the viewpoint of the affected patient. In other words, given the same situation, English is more interested in finding out who does what, while Chinese is more concerned with what has happened. This Chinese conceptualization principle is clearly manifested in the obligatory grammaticalization of the result of an event in verb compounds and in word order. In light of this conceptual scheme, the causative construction can be viewed as an overt mechanism for Chinese to give the meaning of agency. This view is further supported by an interesting observation by Hsueh (1986) that there exists a consistent correspondence relationship between sentences like (17) and (18) and the corresponding ones with bā in (19) and (20).

(19)  他把信写了。
Tā bā xīn xiē-le
'He wrote the letter.'

(20)  他把衣服洗了。
Tā bā yīfú xǐ-le
'He washed the clothes.'
The non-objectivist approach thus leads us to detect a covert conceptual system underlying several areas of Chinese grammar that are of central importance. We will discuss in greater detail later the operation of this conceptual system in Chinese grammar. At present, it suffices to reiterate our main point, namely, that only when we abandon the objectivist philosophy will we be able to discern the internal coherence of the conceptual system underlying a language.

Space and time constitute two of the most important cognitive domains for the conceptualization of situations and happenings in human languages. We will therefore start by investigating grammatical constructions expressing existence and location in space and time. It is a fact that all human beings have the same biological make-up and live in the same universe. It is also a fact that children develop certain perceptual strategies about spatial and temporal relations while or even before they learn to talk about them. Given these facts, it can be expected that there are certain universal constraints on the symbolization of spatial and temporal expressions across different languages. Thus, it would not be surprising that we should find many similarities between English and Chinese with regard to spatial and temporal expressions. Some of the similarities should become clear during the course of discussion. However, for our present purposes, we will focus on the systematic differences between the two languages with respect to the symbolization of reality in space and time in line with the non-objectivist approach elucidated above.

2. Spatial Expressions

It has been observed by psychologists (cf. H. Clark 1973; Miller and Johnson-Laird 1976) that anthropocentrism and anthropomorphism play an important part in human perception of space and time and in language. Both perception and language are determined by biological make-up. Because of biological make-up, humans perceive objects, people, space and time, and their interrelation in a particular and coherent way. The physical world in which we live and the biological structure of our bodies place a certain number of a priori constraints on our perceptions and language. It is clear that children know about different relations in space before they start to talk about them. For instance, children do not use their first spatial prepositions in English until age two or two-and-a-half. However, as documented by Clark & Clark (1977), well before this, they show that they know some objects are containers (e.g. cups, boxes), others are supporting surfaces (e.g. tables, beds), and many have a normal or usual orientation (e.g. a bottle normally
stands upright). E. Clark (1973, 1974) has observed the following three basic rules formed by children of spatial relations pertaining to the concepts of containing, supporting, and touching:

Rule 1: If B is a container, A belongs inside it.
Rule 2: If B has a supporting surface, A belongs on it.
Rule 3: If A and B are related to each other in space, they should be touching.

The fact that children had these three rules as a priori knowledge of spatial relations need not be construed as innate. Following Johnson's (1987) insights, we can reasonably regard these rules as derived from human bodily experience since the very beginning of childhood. As insightfully observed by Johnson, we constantly experience our bodies both as containers, and as things in containers. Similarly, the part-whole relation implied in these three rules can be derived from our bodily experiences since childhood; we are 'whole-things' with parts that we can manipulate.

Since all human beings have the same biological make-up, we have every reason to believe that a Chinese child is born with the same cognitive capacities as an English child. It is therefore safe to assume, pending further experimental evidence to the contrary, that a Chinese child has the same a priori knowledge of spatial relations as reported by Clark before he/she learns to express spatial relations in Chinese. With this assumption, we can see that spatial prepositions in English, such as at, on, in, above, below, between, etc., are more abstract than their equivalents in Chinese. English prepositions at, on and in are abstract symbols standing for one, two, and three-dimensional spatial relations, respectively. Chinese uses the word zài 'to exist or to be located' to indicate the existence of an object, and the whole-part schema to talk about spatial relations. For example,

(21)  那本书在桌子的上头。
Nèiběn shū zài zhūōzi de shàngtóu.
that book exist table 's top
'The book is on the table.'

Notice that zhūōzi de shàngtōu expresses the whole-part relationship just like wǒ de shǒu 'my hand' in Chinese. As a matter of fact, the container scheme operates even more consistently in the you construction as in
(22) 桌子的上头有一本书。
Zhuòzǐ de shàngtóu yǒu yīběnshū
table 's top have one book
'There is a book on the table.'

In (22), with yǒu meaning 'to have or to possess', the whole-part relation holds first between the table and the top, and then between the top of the table as a whole and a book as a contained part.

A digression may be in order here regarding the meaning of zài. We have interpreted the word zài as 'to exist' instead of 'to be located' as commonly translated. Aside from the etymological evidence [i.e., zài cún yě (在存也) 'zài is to exist' as documented in the Shuo Wen Jie Zi (说文解字),], the synchronic evidence for this interpretation can be seen in expressions such as cúnzài (存在) 'to exist, existence,' zhéige wèntí hái zài (这个问题还在) 'the problem is still there,' wǒ zuīfù yǐjīng bù zài-le (我祖父已经不在了) 'My grandfather has passed away.' The close semantic and syntactic relationship between the verb 'to have' and locative phrases across different languages has been a well-known linguistic fact. Yet, it is only in light of the inseparable link between human spatial perceptions and their symbolization in language that the interplay between yǒu and zài in Chinese grammar begins to make sense to us. The language acquisition theory offered by Chomsky in conjunction with the innateness hypothesis can hardly provide any explanation for the relatedness among 'to have,' 'to be,' and locative expressions in natural languages (cf. Lyons 1977).

Returning to the conceptualization of whole and part, Chinese has a general linearization principle in which the whole is ordered before the part. This principle is most vividly illustrated in the order addresses are given.

(23) 台湾，台北，罗斯福路三段，九十九号。
Táiwān, Táiběi, Luòsīfúlù Sānduàn, Jiǔshíjiǔ Hào
'Taiwan, Taipei, Roosevelt Road, Section 3, No. 99.'

The linearization principle in English, on the other hand, is to place the part before the whole, as in the top of the table and in giving addresses. Contrast (24) with (23) above.

(24) 2334, North High Street, Columbus, Ohio, U.S.A.

These two examples above reveal a fundamental difference between Chinese and English in conceptualization of the whole-part relation, which is
manifested in different word orders in the two languages. Before we discuss
the nature of this conceptual difference, it is necessary for us to examine in
more detail how the principle of whole-before-part works in Chinese
grammar. Consider the following examples:

(25)  a. 我剥了橘子的皮。
      Wǒ bō-le júzi de pí.
      'I peeled the orange.'
   b. 我把橘子剥了皮。
      Wǒ bā júzi pó-le pí.
   c. 橘子被我剥了皮。
      Júzi bèi wǒ pó-le pí.
      'The orange was peeled by me.'

(26)  a. 五个橘子我吃了三个。
      Wǔ ge júzi wǒ chī-le sānге.
      five orange I eat-asp three
      'I ate three of the five oranges.'
   b. 我把五个橘子吃了三个。
      Wǒ bā wǔ ge júzi chī-le sānге.
   c. 五个橘子被我吃了三个。
      Wǔ ge júzi bèi wǒ chī-le sānге.
      'Three of the five oranges were eaten by me.'

(25) and (26) would result in ungrammatical sentences if the word order
whole-before-part is reversed. Huang (1982) uses the phrase structure
condition (PSC) he proposes for Chinese to justify the movement of the whole
to the preverbal position. However, it is clear that since PSC is a formal
constraint against having two complements at the lowest level of the
expansion within VP, it clearly says nothing about moving the whole rather
than moving the part. Since 'part' and 'whole' cannot be easily translated
into formal notions in GB, there seems to be no principled way to state this
constraint in Huang’s treatment. (25) and (26) also show that bā and bèi
constructions are not merely formal mechanisms without conceptual basis. In
(25) and (26), the whole-part relation holds not only in the real world but
also in our conceptual world. It is the whole-part relation that enables us to
talk about a part being away from the whole, either as an object (25) or as an
aggregate of objects (26). We have earlier mentioned bā and bèi constructions
as causatives. (25) and (26) thus symbolize the causation as well as the result
of the causation.
In (25) and (26), we describe taking a part away from the whole. In contrast, when we are talking about putting two things together, we can adopt both word orders.

(27)  a. 我把汤加了盐。

Wǒ bā tāng jiā-le yán.

I add-asp salt

I put the salt in the soup.

b. 我把盐加在汤里头。

Wǒ bā yán jiā zài tāng lǐ tou.

I add salt at soup inside

The allowance in (27) for both orders reflects two logical possibilities when we put two things together, that is, either we move $X$ to $Y$, or we move $Y$ to $X$. Furthermore, both logical possibilities are allowed, since the whole-part relation is not fixed until the causation has happened.

A note is perhaps appropriate at this point that we use the bā and bèi constructions here to illustrate the word order constraint imposed by the whole-part relation in order to emphasize the need to construct a conceptual basis for Chinese grammar in terms of our spatial cognition. Many intriguing questions have been raised in the Chinese linguistics literature as to the nature of bā and bèi constructions. In a formalist approach, based in part on these two constructions, Tai (1973) has proposed a controversial theory claiming that Chinese has SOV as the underlying word order. Li and Thompson (1974) argued that Chinese has changed from SVO to SOV. More recently, partly to account for some ungrammatical sentences involving these two constructions, Huang (1982) proposes Chinese is basically a left-branching language. We strongly feel that formal explanations for the two constructions have failed to touch the heart of the matter, no matter how rigorously and elegantly presented. Alternative proposals have been made. Within the framework of functionalism, Wang Li (1947) has proposed a disposal meaning, and Hsueh (1986, 1989) has proposed a topic theory, for these two constructions. While we believe that semantically based functional approaches to the two constructions are on the right track, we also believe that the linguistic semantics employed for various functional explanations for the two constructions must be re-examined in light of the symbolization of causatives in space and time in Chinese culture that we are calling attention to here.

We have earlier noted that while Chinese tends to place the whole before the part, English tends to do the reverse. The question arises as to what we
can reason from this difference about human perception. We wish to
tentatively suggest that, with regard to the containment relation or the
whole-part relation, we as humans place no preference on the ordering of
the whole and part vis-a-vis each other. If our suggestion should prove to
be right, it has non-trivial ramifications for our understanding inherent
cognitive properties. In other areas of perception involving the structure of
the human body, such as up versus down, front versus back, for instance,
humans prefer up to down and front to back because of human canonical
upright body position, and because our eyes are on our faces and not on the
backs of our heads. We walk forwards instead of backwards. These universal
perceptual constraints manifest in all human languages. For example, in
English and Chinese, and presumably most other languages, while up and
front symbolize positive value, down and back symbolize negative value.
Furthermore, dimension expressions such as how far, how tall, how big, etc.
are oriented with up and front, and not with down and back. It has long been
observed by psychologists that the vertical up-down dimension is more
salient than the asymmetrical front-back dimension, which is in turn more
salient than the symmetrical left-right dimension. Since the whole-part
relation allows both word orders in natural languages, it may have the
property of a symmetrical spatial relation too. In the following section, we
will see that the verticality dimension and the asymmetrical front-back
dimension play an important role in Chinese temporal expressions.

3. Temporal Expressions

When children start to talk about events in sequence, they stick closely to
the actual order of occurrence of events in the real world, that is, they
describe the first event first, and the second event second, and so on. For
instance, in production, children say (30) to describe the two-event sequence
the boy jumped the fence and then he kicked the rock (Clark & Clark 1977:
506-508).

(30) Boy jumps fence, boy kicks rock.

Children also find it easier to comprehend and to imitate adult descriptions
where the order in which events are mentioned mirrors the order in which
events occur. Thus, for example, for three-and-four year old, the
sequences in (31) are easier to imitate than the ones in (32) (Clark & Clark
(31)  a. The boy came in before the girl did.
    b. After the dog bit him, the man ran away.

(32)  a. The girl came in after the boy did.
    b. Before the man ran away, the dog bit him.

In a recent work on word order in Chinese, Tai (1985) proposed the principle of temporal sequence (PTS): the relative word order between two syntactic units is determined by the temporal order of the states or events which they represent in the conceptual world. Tai shows that this principle captures the most general tendency of word order in Chinese. This principle covers, for example, the natural serialization involving two temporally-conjoined clauses and phrases in Chinese. For instance,

(33)  a. 我吃过饭，你(再)打电话给我。
       Wǒ chī-guò fàn, nǐ (zài) dā diànhuà gěi wǒ.
       'I eat-asp meal, you (then) make telephone to  I
       'Call me after I have finished the dinner.'
    b. *你(再)打电话给我，我吃过饭。
       *nǐ (zài) dā diànhuà gěi wǒ, wǒ chī-guò fàn.

(34)  a. 张三骑自行车走了。
       Zhāngsān qí xìzhàngché zǒu-le
       John ride bike leave-asp
       'John left riding his bike.'
    b. *张三走了骑自行车。
       *Zhāngsān zǒu-le qí xìzhàngché.

(35)  a. 他比我高。
       Tā bǐ wǒ gāo.
       he compare me tall
       'He is taller than I.'
    b. 他高比我。
       *Tā gāo bǐ wǒ.

(36)  a. 他对我自。
       Tā dui wǒ shuō.
       he face I say
       'He said to me.'
    b. *他说对我。
       *Tā shuō dui wǒ.
(37)  a. 他跟我去。
    Tā gèn wǒ qù.
    'He went with me.'

b. *他去跟我。
    *tā qù gèn wǒ.

(38)  a. 他在厨房里做饭。
    Tā zài chūfāng-lǐ zuòfàn.
    'He is cooking in the kitchen.'

b. *他做饭在厨房里。
    *tā zuòfàn zài chūfāng-lǐ.

(39)  a. 他掉在水里。
    Tā diào zài shuǐ-lǐ
    'He fell in the water.'

b. *他在水里掉。
    *tā zài shuǐ-lǐ diào.

(40)  a. 他用筷子吃了那碗饭。
    Tā yòng kuàizi chī-le nèi-wān fàn.
    'He ate that bowl of rice with chopsticks.'

b. 他吃了那碗饭用筷子。
    *Tā chī-le nèiwān fàn yòng kuàizi.

Furthermore, Tai (1985) shows that the PTS also gives a natural account for numerous cases of meaning contrast induced by different word orders in Chinese. A few examples should be useful here. Contrast (41) with (42), and (43) with (44).

(41)  他坐公共汽车到这儿。
    Tā zuò gōnggōng-qíchè dào zhèr.
    'He came here by bus.'

(42)  他到这儿坐公共汽车。
    Tā dào zhèr zuò gōnggōng-qíchè.
    'He came here to ride in a bus.'
There is no need to repeat Tai's discussion of the the explanatory value of PTS for the above set of data in Chinese. What is worth pointing out here is that PTS provides a natural semantic explanation for the systematic functional difference between the preverbal and the postverbal zài phrase as illustrated in (38), (39), (43) and (44). As we have pointed out earlier, the focus on the result part of an event is one of the central principles underlying Chinese grammar in word order and in lexical semantics as well.

It should be noted here that, with the exception of (39b), the (b) sentences in (35) through (40) can be acceptable with different functions of focus including that of after-thought. It has often been observed in Chinese grammar that the focused element in Chinese tends to be placed at the end of the sentence. In fact, following Osgood (1980), Tai (1985) has called attention to an important distinction between natural word order and salient word order. While the natural word order is perception based, the salient order carries with it the speaker's interests, involvement, focus, etc. PTS is a principle of natural word order in that it is based on our perception of events and states in temporal sequence. The interplay between PTS and the Saliency Principle (SP) in Chinese word order remains to be investigated. For the present purpose, it suffices for us to use a few examples to illustrate a possible way in which the two principles interact. Consider, for example,

(45) 我病了，没去开会。
Wǒ bìng-le, méi qù kāi huì.
'I was sick, and (therefore) didn't attend the meeting.'

(46) 我没去开会，因为我病了。
Wǒ méi qù kāi huì, yīnwèi wǒ bìng-le.
'I didn't attend the meeting, because I was sick.'
(45) employs the natural order of presenting the reason before the consequence, and (46), the salient order of placing the consequence before reason. Similarly,

(47) 他天天念书，以便考上大学。
Tā tiān-tiān niàn shū, yǐbiàn kǎoshāng dàxué.
'He studies every day in order to pass the college entrance exam.'

(48) 为了考上大学，他天天念书。
wèi-le kǎoshāng dàxué, tā tiān-tiān niàn shū.
'In order to pass the college entrance exam, he studies every
day.'

(47) uses the natural order of action before the goal, in accordance with PTS, and (48) places the goal in front of the beginning of the sentence, following SP.

An integrated theory of word order in Chinese in terms of functional and cognitive principles requires principles in addition to PTS and SP. We will introduce them as we proceed in our discussion. At this point, we would like to introduce a principle of 'information center' in Chinese (hereafter to be referred to as PIC), which can account for the fact that syntactic mappings in Chinese operate in terms of the center of information and not necessarily in accordance with the syntactic head as in English and other European languages. PIC is independently motivated for the distribution of the negative bù and A-not-A questions in Chinese. For example,

(49) a. 他跑得不快。
Tā pǎo de bù kuài.
'He doesn't run fast.'

b. *他不跑得快。
*Tā bù pǎo de kuài.

(50) a. 他跑得快不快。
Tā pǎo de kuài bu kuài
'He run de fast not fast
'Does he run fast?'
b. *他跑不跑得快。
   *Tā pāo bu pāo de kuài.7

The difference between SP and PIC is an important one and needs to be clarified. While SP is defined on the notion of focus, PIC is defined on the notion of information center. Focus involves the packaging (la Chafe 1976) of information based on the attitude of the speaker, while 'information center' is pragmatically structured and is independent of a speaker's attitude. Thus, in both Chinese and English, the information center of 'He runs fast' falls on 'fast,' and not the verb 'run.' This is because the statement 'He runs fast' presupposed 'He runs,' and 'fast' is the asserted part of the statement. When we ask the question 'Does he run fast?' we are not questioning whether he runs or not, but rather whether his running is fast or not. The difference between Chinese and English in this respect lies not in semantics but in syntax, in that Chinese syntax refers to the 'information center' rather than 'the verb.' Huang (1988) argues that the head of

(51) 他跑得快。
   Tā pāo de kuài
   he run de fast
   'He runs fast.'

is not kuài but pāo. Since Huang has given strong argument within the GB framework for pāo as the head of the VP in (51), we can assume pāo is the verb in (51) in so far as one has to work with the assumption that Chinese has a clear notion of lexical category of 'verb' as in English. It seems that some principles of Chinese grammar have to refer to the 'head,' while others have to refer to the 'information center.'8 Thus, in addition to the distribution of the negative bù and the A-not-A question, word order in Chinese is also governed by PIC. As far as the word order is concerned, PIC can be stated as

PIC: The asserted part of a sentence is ordered after the presupposed part.

By PIC, the 'information center' is the asserted part and is ordered after the presupposed part. PIC is also compatible with the topic-comment structure in Chinese (cf. Li and Thompson 1976) in that both topic and what is presupposed represent 'given' information, and comment and the asserted, 'new' information. Thus, it is possible to collapse PIC and the topic before the comment principle into one single principle familiar in linguistic literature, that is,
The given is ordered before the new.

It is interesting to see that the principle of given before new is consistent with the PTS. While PTS is determined by the temporal sequence in the objective world, the given-new principle is determined by the temporal sequence in the subjective-mental-temporal axis. It is therefore not surprising that Chinese is a topic-comment language and obeys PTS more consistently than many other languages.

The distinction between the objective and the subjective conceptualization of temporal sequence has many important ramifications for our understanding of Chinese grammar. Although we cannot at this point elaborate on this distinction, we would like to give a general idea of how the subjective temporal sequence works in the present framework. Consider,

(52) My president, my dean, and my chairman talked to me.

There are three possible interpretations of this sentence: (1) three events took place in the order as indicated by the coordinated subjects; (2) only one event took place but the order reflects my ranking of the three subjects in importance, and (3) only one event took place without the ranking. (1) represents the temporal sequence in the real world, (2) in the subjective mind of the speaker, and (3) a lack of temporal sequence in both real world and the subjective mind.9

Furthermore, PIC can be extended to cover another important fact of word order in Chinese, namely, a relative clause precedes its head noun, if the notion of pragmatic presupposition that we have employed in PIC can be extended to the kind of presupposition which the relative clause represents in relation to the main clause. If so, then PIC, or perhaps even the given-new principle, can serve as a functional principle which determines the consistent order of the modifier before the modified, and which allows for the existence of of the so-called pseudo-relative clauses as in

(53) 他开门的声音很大。
    Tā kāi mén de shēngyīn hěn dà
    he open door de sound very big
    'The sound of his opening door is very loud.'
(54)  他把买书的钱都花光了。
Tā bǎ mǎi shū de qián dōu huā kuàngle.
'He has squandered all his money which was for him to buy books.'

For the sake of completion, we need to mention that the PTS determines the asymmetrical word order between two units X and Y. Hence, a lack of temporal relation will allow both X-Y and Y-X order and thus a symmetrical word order. The most conspicuous examples can be found in coordinate structures.

(55)  a.  他天天看书写字。
Tā tiāntiān kànshū xiězì
he day-day read book write character
'Every day he reads and writes.'

b. 他天天写字看书。
Tā tiāntiān xiězì kànshū

(56)  a.  他一边儿工作一边儿念书。
Tā yībiān gōngzuò yībiān niànshū
he one side work one side study book
'He worked and studied at the same time.'

b. 他一边儿念书一边儿工作。
Tā yībiān niànshū yībiān gōngzuò

Similarly, the lack of temporal sequence would allow coordinate noun phrases to have free word order.

4. Spatially Based Temporal Expressions

Now I would like to turn to the second part of our exploration of time expressions in Chinese. We will be guided by the localist hypothesis (cf. Clark 1973, Lyons 1977) which assumes that time is a spatial metaphor. This hypothesis is based on the observation, known to linguists for a long time, that spatial and temporal expressions in English as well as other languages coincide considerably. The hypothesis assumes that spatial expressions are more basic, grammatically and semantically, than non-spatial expressions of
various kinds including time expressions. In the previous section, we have dealt with the PTS, which is independent of the spatial metaphor. In this section we will focus on time expressions, which are based on the metaphorization of spatial expressions.

In discussing spatial expressions in Chinese, we have noted that the word zài indicates the location or existence of an object in space. In temporal expressions, it indicates an action in progress. For example,

(60) 我在看书。
    Wǒ zài kànshū.
    I at read book
    'I am reading books.'

(60) can be construed as 'I am located in the time period of reading.' On this point, Chinese is similar to many pidgin and creole languages. Similarly, the aspect marker zhe have originated from the notion of 'be attached to some location.'

(60) 我看着书呢。
    Wǒ kàn-zhe shū ne.
    I read-asp book
    'I am reading the books.'

The differences between zài and zhe as aspect markers within the framework of temporal structure have been adepty analyzed by Chan (1980). It is obvious from her analysis that while zài locates a process on the time axis, zhe locates a state on time axis. Tai (1987) proposed a localist theory of aspect markers in Chinese and showed that the temporal structures of the aspect markers in Chinese can be explained in terms of their spatial structures on the time axis.

We have observed earlier that Chinese spatial expressions follow the principle of placing the whole before the part in word order. Not surprisingly, temporal expressions in Chinese obey the same principle. For example,

(62) 现在是一九八七年二月二十六号, 下午四点三十分。
    Xiànzài shì yì-jiǔ-bā-qi nián éryuè èrshíliùhào,
    now be 1 9 8 7 year Feb. twenty-six no.
    xiàwǔ sìdiǎn sānshí fèn
    afternoon four hour thirty minute
    'It is now 4:30 p.m., February 26, 1987.'
This striking similarity in word order between temporal and spatial expressions has prompted Tai (1985) to propose the principle of temporal scope (PTSC):

If the conceptual state represented by a syntactic unit $X$ falls within the temporal scope of the conceptual state represented by a syntactic unit $Y$, then the word order is $YX$.

PTSC accounts for examples such as

(63)  
(a) 他昨天来了。  
Tā zuótiān lái-le.  
he yesterday come-asp.  
'He came yesterday.'
(b) *他来了昨天。  
* tālái-lezuótiān.

(64)  
(a) 他来的时候，我在看书。  
Tā lái de shìhòu, wǒ zài kān shū.  
he come de time I at read book  
'When he came, I was reading books.'
(b) ?我在看书，他来的时候。  
? wǒ zài kānshū, tā lái de shìhòu.

Zuótiān 'yesterday' in (63) and tā lái de shìhòu 'when he came.' in (64) delimit temporal scopes within which events occur. In (63), since the event is represented by the verb 'to come,' 'yesterday' is ordered before the verb by PTSC. In (64), the event is represented by the main clause, and so the subordinate clause 'when he came' is ordered before it by PTSC.

Temporal scope is not the only way in which the more concrete notion of spatial scope can be extended. Other extensions are possible. Thus, in Chinese, there exists a consistent correspondence between the scope interpretation and word order as exemplified in the meaning contrast between (65) and (66), and between (67) and (68).

(65)  
Tā bù cháng lái.  
he not often come  
'He doesn't come often.'
In general, however, our Chinese data strongly support the hypothesis that the notion of scope has a conceptual basis in our basic spatial knowledge. In other words, our concepts of abstract scope and other logical inclusions pattern after our perception of spatial inclusion based on the whole-part relation.

H. Clark (1973) has made several observations regarding time as a spatial metaphor. First, because time is one-dimensional, it ought to be described by one-dimensional spatial terms. Thus, in English as well as in Chinese, we say time is very long, and not time is very wide; nor is time very tall. The concept of wide involves two dimensions, and tall, three dimensions.

(70)  
时间很长。  
Shíjiān hěn cháng.  
'time very long'  
'Time is long.'

(71)  
*时间很宽。  
*Shíjiān hěn kuān.  
'time very wide'  
'Time is wide.'

(72)  
*时间很高。  
*Shíjiān hěn gāo.  
'time very tall'  
'Time is tall.'

In Chinese, one can say
(73)  Shíjiān hěn kuān-yú.
    'There is ample time.'

While *kuān-yú* 'ample' is a compound consisting of *kuān* 'wide,' it doesn't necessarily retain the imagery of 'wide,' as in (71). Second, because time is required only for events with dynamic properties, we expect time to be described in terms of expressions that involve motion through space. Thus, in Chinese as well as in English, we say

(74)  Shíjiān guò-de zhēn kuài
    'Time passes quickly.'

(75)  Wǒ cóng xīngqī-yī gàn dào xīngqī-wǔ.
    'I work from Monday through Friday.'

Third, because time is asymmetrical or directed, we expect it to be described by the asymmetrical spatial relation front-back rather than symmetrical relation left-right. In this respect, Chinese is not different from English.

Chinese and English, however, are different with regard to the 'moving time' metaphor and the 'moving ego' metaphor. H. Clark (1973) suggests that time can be viewed as a highway consisting of a succession of discrete events. In the moving ego metaphor, we are moving along the highway, with the future ahead of us and the past behind us. In the moving time metaphor, the highway is moving towards us. It is with the moving time metaphor that Chinese uses qiántiān (前天) 'front day' to stand for 'the day before yesterday,' qiánbànqiān (前半天) 'front half day' for morning, qiánbèi (前辈) 'front generation' for 'the older generation,' etc., and conversely hòutiān (后天) 'back day' to stand for 'the day before yesterday,' hòubànqiān (后半天) 'back half day' for 'afternoon,' hòubèi (后辈) 'back generation' for 'younger generation,' etc. In some other expressions, Chinese uses the moving ego metaphor. For example, qián tú (前途) 'front-road' means 'future,' qián jìn (前进) 'front-advance,' means 'to advance,' hòu lù (后路) 'back-road' means 'retreat,' and hòu tuì (后退) 'to retreat.'
English uses both metaphors too. In the case of moving time metaphor, English has to use 'before' and 'after' instead of 'front' and 'back' as in Chinese. It seems that Chinese speakers prefer the moving time metaphor, whereas English speakers prefers the moving ego metaphor. To many native speakers of English, the expression qiāntiān (前 天) 'front day' means 'the day ahead' and conversely the expression 'back day' means 'the day behind.' Perhaps the existence of before and after expressions are needed in English to counter the preference to the moving ego metaphor. In other words, we are suggesting that English speakers shift the moving ego metaphor to the moving time metaphor when they use 'before' and 'after' expressions. In contrast, since Chinese prefers the moving time metaphor, there is no need for this kind of adjustment.

In contrast to English, Chinese systematically uses vertical spatial relation above-below to describe the past and the future. For example, shàngqī yuè (上 个月) 'above month' refers to 'last month,' shàngqī xīngqī (上个星期) 'above week' to 'last week,' and shàng cì (上 次) 'above time' to 'last time,' xiàqǐ yuè 'below month' refers to 'next month,' xiàqǐ xīngqī (下个星期) 'below week' to 'next week,' and xià cì (下 次) 'below time' to 'next time.' As often encountered in Chinese classrooms in this country, American students in first year Chinese often find the system counter-intuitive. To them, above is related to moving up, therefore future, and by contrast, below is related to the past. Here, we have another indication that English speakers prefer the moving ego metaphor. The contrast between Chinese and English with regard to the preference of one over the other metaphor may or may not bear a relation to an often-noted observation that Chinese thinking pattern tends to be static, while Western thinking pattern tends to be dynamic. Again, it needs to be made clear that within the framework of the non-objectivist approach the main concern is the existence of possible alternative perceptual strategies to the same objective reality, and not the correlation between the choice of alternative strategies and a particular cultural tradition. Herein lies the fundamental difference between the classical Sapir-Whorfian hypothesis and the present non-objectivist approach.

Let us use the above-below spatial metaphor to illustrate a culturally-based approach and the present non-objectivist approach. As a first approximation, we might be tempted to relate the metaphor in question to the fact that in the Chinese cultural tradition, seniors are perceived as above, with more authority, and juniors as below, with less authority. This is indicated in expressions such as shàng yī dài (上 一代) 'above one generation' or 'last generation' versus xià yī dài (下 一代) 'below one generation' or 'next generation' and shàng yī jí (上 一级) 'above one step' or 'immediate superiors'
versus xià yí jiér (下一级) 'below one step' or 'immediate subordinates.' Or alternatively, we might be tempted to correlate this metaphor with the tradition of writing from top to bottom in Chinese. Within the general constraints of the non-objectivist approach, we have to reject both culturally-based explanations. In fact, we have searched for a spatial experience for the above-below temporal expressions. We suggest that our experience with objects falling from the sky to the ground (because of the law of gravity) provides a reasonable perceptual basis for this particular above-below metaphor for temporal expressions in Chinese and possibly in other languages.11

5. Conclusion

In this essay we have proposed a philosophy, a method, and a new line of research for constructing Chinese grammar. By adopting a non-objectivist approach, we have made an attempt to see the structure of the Chinese language without any undue interference from those formal grammatical theories which are rooted in the morpho-syntactic features of Indo-European languages. Specifically, we turned to a cognitive-functional framework which is based on some basic perceptual strategies and communication principles independent of morpho-syntactic features in any particular language. In this way, we become free from the confinement of deeply rooted Western grammatical concepts, and transcend superficial issues such as whether Chinese has 'parts of speech,' whether Chinese covers prepositions, whether Chinese is an SOV language, whether Chinese is head-final, and many other issues arising within the framework of formal structural linguistics—traditional or contemporary. We view Chinese grammar as a communication system adopted by Chinese speakers based on a set of conventional symbolic imageries. Furthermore, we view grammar in general as symbolic of the reality we experience and perceive within the constraints of our body structures and motion. Because of the central importance of space and time in our cognitive system, we start with them in our construction of a cognitively-based functional grammar of Chinese. This paper represents only a preliminary attempt in this direction. Nevertheless, we are confident that the direction we take is generally on the right track, and that many more hidden structural principles in terms of spatial and temporal perceptions can be gradually uncovered as research progresses.

The proposed non-objective approach not only will enable us to uncover many true generalizations in Chinese grammar but it may also provide us with a rational and empirical method for the search of language universals in terms
of basic human perceptual strategies regarding space and time. Language universals are then natural outcomes of the interaction of human perceptual mechanisms and the physical world. Thus, the whole-part relation is part of our perceptual system and is also a language universal principle. The notion of temporal sequence is part of our conceptualization of the physical world and therefore is also a language universal. The fact that English grammar exhibits only some traces of this principle does not rule out the universality of this principle. It is quite possible that some other grammatical principles specific to English, due to its inflectional morphology, may have overridden the temporal sequence principle. Other language differences may be due to the choice of the allowed options as we have discussed in the case of linearizing the part and the whole or in the case of the choice of available universal time metaphors. Some language universals, such as the saliency principle which we have discussed in conjunction with the temporal sequence principle, can be viewed as universal strategies of communication. Again, they can be overridden by language-particular mechanisms such as emphatic markers.

We have observed that Chinese exhibits grammatical structures similar to child language. It has also been recently observed that Chinese shares with creoles and pidgins a great deal of grammatical features. Perhaps a direct way to discover language universals is to investigate non-inflectional languages like Chinese together with child language, creoles and pidgins, as suggested by Bickerton (1981) and Haiman (1985). For this purpose, one can use the proposed cognition-based functional grammar as a general framework.

A final note is needed regarding the nature of phrase structures. Since the proposed grammatical theory does not assume a set of phrase structures to begin with, many questions regarding the origin of hierarchical structures in grammar, in addition to word order, need to be addressed in the future. At this point, we do not have a concrete program to account for hierarchical structures. To what extent hierarchical structures are motivated by abstract mathematical principles and to what extent are they motivated by perceptual strategies remain an open question. For example, recently Langacker (1987), working within the framework of cognitive grammar, has shown that parts of speech such as nouns and verbs can be semantically defined by certain cognitive principles. Also, an earlier attempt by Hopper and Thompson (1984) has shown that universal lexical categories such as nouns and verbs can be derived from their discourse functions in human communication. Therefore, in principle, we will be able to construct a grammar, any grammar, by relying
essentially on principles that are conceptually motivated rather than logico-
mathematically structured.\textsuperscript{12}

NOTES

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1. Chomsky is often considered a transformationalist and mentalist against
Bloomfield, a structuralist and behaviorist (see Newmeyer 1980). From
our point of view of functionalism, Chomsky belongs to the mainstream of
structuralism in that he believes that linguistic structures are independent
of communication functions.

2. Hsieh (1978: 168) gives his explanation for this attitude of linguists:

However, linguists, encouraged by the initial success of the 19th century
neo-grammarians, scholars in uncovering the regularity of change in
phonological forms, have laid a seemingly disproportionate emphasis on
syntax and phonology which are studies on linguistic forms, to the
neglection [sic] of semantics, which concerns meaning and the reality
behind meaning. For over a century, since the day of neo-grammarians,
most linguists have insisted on studying language as what amounts to a
mathematical system of formal operations rather than as a psychological
system of human communication. The peak of this trend coincided with
the appearance of Chomsky's transformational generative grammar, a
framework that purports to study language through syntax, viewed as in
essence independent of semantics and the real world.
3. As observed by Li and Thompson (1982:445), when the object is a personal pronoun or a definite animate noun phrase, the pattern of verb-object-duration phrase is acceptable. For example,

(101) 他看了我三個鐘頭。
Ta kān-le wǒ sān ge zhōng tóu.
He watch-asp I three hour
'He watched me for three hours.'

(102) 他等了張小姐三個鐘頭。
Ta děng-le Zhāng xiǎojie sān ge zhōng tóu.
He wait-asp Zhāng Miss three hour
'He waited for Miss Zhang for three hours.'

The acceptability conditions for the pattern in question are much more complicated than hitherto understood. See Tai (1988) for some of these conditions and a motivation-based explanation for the intricate phenomenon of verb-copying in Chinese.

4. By 'natural,' we mean that a conceptualization embodied in a grammatical pattern is based on iconic motivations, metaphorical extensions, principles of economy, or principles of communication. Admittedly, the basis of regarding something as natural and something as not cannot always be clearly defined. However, as the search for motivations for grammatical patterns continues, we will have better ways of answering the question as to what constitutes natural ways of symbolization in grammar. For example, many hidden imageries underlying Chinese grammar are for the first time uncovered by Hsieh (1989, in this volume).

5. Both (10) and (11) can become acceptable, if followed by another clause such as kēshì hái méi tiào jīngú, yīnwéi tā pá sǐ (可是還沒跳進去，因爲他怕死) ‘but he hasn’t jumped into (the river) yet, because he is afraid of death.’ This fact further supports our contention that the verb reduplication involving duration expressions in Chinese is semantically motivated and cannot be neatly characterized in terms of syntactic conditions or simple semantic features specified for verbs.

6. This point is further elaborated by Hsieh (1989, in this volume).

From such a perspective, we can see clearly that English and Chinese operate with two strikingly different systems for expressing spatial
relations. English employs a one-step method which requires the use of prepositions such as at, on and in which seem to be of a homogeneous kind but which actually stand for one-, two-, and three-dimensional spatial relations, respectively. By contrast, Chinese operates with a two-step schema. First, Chinese uses the word zài 'to be located at/on/in' to indicate the general nature of the relation, namely, that it is a spatial relation. As a second step, Chinese elaborates this relation by further indicating whether it is to the side of, on the top of, or inside of, something that the thing in question is located. And this is achieved by means of a network in which the perceptual container and the perceptually contained are treated as the possessor and the possessed.

7. To many native speakers, this sentence is marginal rather than ungrammatical. On closer scrutiny, it is due to the dual functions of de. If de is understood as the potential infix meaning 'can,' then the sentence is grammatical; if it is understood merely as a modifying marker, then the sentence is ungrammatical. The marginality of this sentence for many speakers is therefore attributable to the dual interpretations of de.

8. At this point, we are not clear as to which principles of Chinese grammar have to refer to the 'head,' and which principles have to refer to the 'information center.' However, as the grammatical theory proposed in this writing continues to develop, we can envision that the structural 'head' may have more to do with the algorithmic system of language processing, and the 'information center' with the heuristic system of pragmatic inference.

9. See Hsieh (1989, in this volume) for a systematic extension of Tai's temporal sequence principle by dividing time into real, inferred, and imaginary times.


11. The proposed experiential metaphor based on the law of gravity was suggested by Leon Serafin (personal communication).

12. In Fall, 1988, the Cognitive Science Lecture Series at the Ohio State University sponsored two lectures by linguists on the biological and psychological foundations of natural language. The first was by Geoffrey K. Pullum, who argued that
The most widely held view of what linguistic theory is about, namely the view that it has the biology of the human brain as its ultimate object of study, is decidedly implausible. It is unnecessary to look to neurophysiology to find a secure subject matter to which linguistic theory can be anchored. Biologically verifiable facts about the language capacity of the human species are not of interest to grammatical theorists; nor should they be. And sound examples of universal generalizations about grammatical structure regularly show clear signs of having plausible, nonbiological sources, located deep enough in ecology and economics of information and cognition to be characteristic of not just human brain but also many other types of abstract systems. (from the published abstract of Pullum's lecture).

In response, Wayne Cowart argued that

The phenomena of human speech comprehension reflect the activity of at least two distinct cognitive subsystems of quite different character. Only one of these mechanisms seems to implement an algorithmic system like that suggested by phonological, syntactic and semantic theory in linguistics. Thus, psychological research that seeks to tease apart the contributions of the two subsystems is relevant to the core concerns of linguistic theory. (from the published abstract of Cowart's lecture.)

Our present focus on conceptually motivated rather than algorithmic aspects of linguistic structure is thus not only in clear contrast with Chomsky's view of language and cognition, but is also different in many significant ways from the view held by Pullum as well as that by Cowart. As we develop the proposed cognition-based functional grammar of Chinese further, we will be able to elucidate our position more definitely and more distinctly from those of other linguists with regard to the fundamental question concerning language and human cognition.

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The Semantics of Causatives in Chinese

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A. Scope of This Study.

The causative constructions in Chinese have attracted much attention in the study of modern Chinese syntax due to the fact that they abound in the so-called resultative structures, especially resultative complements (cf. Chao 1968). But most literature in this area deals only with those causative constructions that involve the general relationship of actions (in Event₁) and results (in Event₂), where results specify states, e.g. 'wipe-dry' (cf. Huang 1974). I shall simplify the matter and refer to such cases as 'Agent-Patient' causatives.

This paper will, on the other hand, study what I shall call 'Agent-Agent' causatives, which specify the relationship of actions in Event₁ and actions in Event₂, e.g. 'make him leave.' These constructions have heretofore received scanty analysis, except in Chappell (1983).

Other possible causative relationships will not be dealt with in great length in this paper. For example, the relationship 'Patient-Agent' is quite common, e.g. 'The famine caused a great number of people to migrate northward.' So is 'Patient-Patient,' e.g. 'The move made him depressed.'

Whether a particular type of causative sentence in Chinese is literary or colloquial or whether standard or dialectal will not be our concern in this paper, either. For instance, the causative verb shǐ (使) may be felt to be more literary than jiào (叫), but it can also be equally common in a specific community, e.g. among the better educated. And a particular usage of ràng (让) (see Section D) is not observed among Mandarin speakers in the south, particularly in Taiwan. But these matters will be ignored in this paper.

B. Defining Causative Verbs.

By causative verbs, I shall refer strictly to those which will fit the syntactic frame of 'Subject + Causative verbs + State verbs.' This specification has the
following consequences. First, causative constructions are distinguished from resultative-complement constructions. Verbs that can occur in the latter constructions are not causative verbs. Compare the following,

(1) a. 他把衣服洗干净了。  
Tā bǎ yīfú xǐ-gānjìng le.  
'She washed the clothes.'

b.*他洗衣服干净了。  
Tā xǐ yīfú gānjìng le.  
'She washed the clothes.'

(2) a. 他把地址写错了。  
Tā bǎ dìzhǐ xiě-cuò le.  
'He wrote down the address wrongly.'

b.*他写地址错了。  
Tā xiě dìzhǐ cuò le.  
'He wrote down the address wrongly.'

in which the verbs 'wash' and 'write' do not fit the syntactic frame and are not causative verbs, though they can be associated with, but not cause, the occurrence of certain results. Thus these verbs can take 'clean' and 'wrong' only as resultative complements. 'Wash' and 'write' are members of simple action verbs.

On the other hand, the verbs in the sentences below,

(3) a. 这件事使他很生气。  
Zhè-jìàn shì shǐ tā hěn shēngqì.  
'This made him really angry.'

b.*这件事把他使生气。  
Zhè-jìàn shì bǎ tā shǐ shēngqì.  
'This made him really angry.'

(4) a. 这件事让他很满意。  
Zhè-jìàn shì ràng tā hěn mǎnqì.  
'This made him very pleased.'

b.*这件事把他让满意。  
*Zhè-jìàn shì bǎ tā ràng mǎnqì.  
'This made him very pleased.'

do fit the syntactic frame above and are defined as causative verbs in this paper. The (b) sentences indicate that these verbs do not take complements.
Second, causative constructions are distinguished from indirect imperative sentences (or pivotal sentences in Chao 1968), such as:

(5) a. 我催他赶快缴所得税。
    Wǒ cuī tā gānkuài jiāo suǒde shuì.
    'I urged him to pay the income tax quickly.'

b. 我们都劝他多喝一点酒。
    Wǒmen dōu quán tā duō hè yìdiār jiǔ.
    'We all urged him to drink more wine.'

c. 学生请他签名。
    Xuéshēng qǐng tā qiānmíng.
    'Those students asked him to sign his name.'

the main verbs of which do not qualify as causative verbs on account of the fact that they cannot take state verbs in Event 2, e.g.:

(6) a.* 我催他快醉。
    *Wǒ cuī tā kuài zuì.
    '*I urged him to be drunk quickly.'

b.* 我们都劝他快乐。
    *Wǒmen dōu quán tā kuàile.
    '*We all urged him to be happy.'

c.* 学生请他舒服。
    *Xuéshēng qǐng tā shūfù.
    '*Students asked him to be comfortable.'

This restriction corresponds exactly to the fact that state verbs do not occur in (positive) imperative sentences, e.g.:

(7) a.* 快一点儿醉!
    *Kuài yìdiār zuì!
    '*Be drunk quickly!'

b.* 快乐一点儿!
    *Kuàile yìdiār.
    '*Be happier!'

c.* 舒服!
    *Shūfù!
    '*Be comfortable!'

Imperative sentences, direct or indirect, are not causative sentences.
Causative verbs are, then, verbs that must be able to take state verbs in Event 2, but the requirement does not state that they can only take state verbs, as we will see below. In this paper, we will concentrate on shǐ (使), ràng (让), and jiào (叫).

C. Taxonomy of Causative Sentences.

Some causative verbs that satisfy the syntactic requirement specified in the section above can also take actions in Event 2, e.g.:

(8) a. 我让他很失望。
    wǒ ràng tā hěn shīwàng.
    'I made him disappointed.'

b. 我让他解释一下儿。
    Wǒ ràng tā jiěshì yìxiā.
    'I let him explain.'

(9) a. 他叫我很满意。
    Tā jiào wǒ hěn mānyí.
    'He made me satisfied.'

b. 他叫我尝了一口菜。
    Tā jiào wǒ chángle yì-kǒu cài.
    'He made me take a taste of the dish.'

(10)a. 他使我很生气。
    Tā shǐ wǒ hěn shēngqì.
    'He made me very angry.'

b.*他使我喝了很多酒。(if 'ta' = agent)
    *Tā shǐ wǒ hēle hěn duō jiǔ.
    'He made me drink a lot of wine.'

Thus, there are different classes of causative verbs. Furthermore, the frame 'Subject + Causative verbs + Object + State verbs' only specifies 'subject' and 'object,' when a subject or an object can also be agent or patient. Therefore, causative sentences can be classified on the basis of these different parameters, i.e.:

(11) Agent-Agent.

a. 我故意让他解释一下儿。
    Wǒ gùyì ràng tā jiěshì yìxiā.
    'I deliberately let him explain.'
b. 他故意叫我尝了一口菜。
   Tā gùyì jiào wǒ chángle yī-kǒu cài.
   'He deliberately made me take a taste of the dish.'

c.* 他故意使我喝了很多酒。
   *Tā gùyì shǐ wǒ hè-le hěn duō jiǔ.
   'He deliberately made me drink a lot of wine.'

(12)  **Agent-Patient.**

a. 他故意让他吓一跳。
   Wǒ gùyì ràng tā xià yī tiào.
   'I deliberately made him frightened.'

b. 他故意叫我生气。
   Tā gùyì jiào wǒ shēngqì.
   'He deliberately made me angry.'

c. 学生故意使他吃了一惊。
   Xuéshēng gùyì shǐ tā chī-le yī jīng.
   'The students deliberately made him surprised.'

(13)  **Patient-Agent.**

a. 那个电影让他茶饭都喝不下。
   Nà-ge diànyǐng ràng tā chá fàn dōu hē bù xià.
   'That movie made him lose all appetite.'

b. 满嘴的饭叫他说不出话来。
   Mǎn-zuǐ de fàn jiào tā shuō-bù-chū huà lái.
   'A mouthful of rice made him unable to utter any sound.'

c. 过多的酒使他说了一些不该说的话。
   Guò duō de jiǔ shǐ tā shuō-le yìxiē bù gāi shuōde huà.
   'Too much wine made him say what he should not have said.'

(14)  **Patient-Patient.**

a. 他的为人让我很失望。
   Tāde wéi rén ràng wǒ hěn shīwàng.
   'His ways made me disappointed.'

b. 这次成果叫他很满意。
   Zhè-cì chéngguǒ jiào tā hěn mǎnyì.
   'The result this time made him satisfied.'

c. 失败使他更灰心。
   Shībài shǐ tā gèng huīxīn.
   'Failure made him even more frustrated.'
Note that not all causative verbs can participate in all the different types of sentences. Of the three, 使 is the least versatile and can not occur in an Agent-Agent sentence (cf. 11c). In terms of frequency, 叫 jiao and 让 rang are least compatible with Patient-Agent sentences. Note that if 'volition' is an obligatory feature of the case Agent, none of the Event 2 in (13a-c) qualifies as genuine agent sentence. Chinese abounds in sentences like (15a), which can be either volitional or non-volitional. Compare the translation in (15b) and (c).

(15) a. 他喝了一口 水。  
Tā hèle yī-kǒu shuǐ. \((±\text{ volitional})\)  
b. 'He had a drink of water.' \((+\text{ volitional})\)  
c. 'He swallowed some water.' \((±\text{ volitional})\)

Thus in (13a), 'losing appetite' is more like a state, and, in (13b), 'unable to utter' is also like a state. Note that in both (13a) and (b), the Chinese sentences employ the so-called 'potential' resultative complement, and not straightforward action verbs.

It may be worthwhile to consider other related items in this connection, viz. 弄 nong, 弄得 nongde, and 使得 shide. Nong is a general (pro-)verb that can substitute many common action verbs (cf. Lū 1981:373) but cannot be a causative verb. It can only take resultative complements and does not fit the causative syntactic frame (see below).

(16) a. 狗 弄 坏 了 不 少 东 西。  
Gǒu nong-huài le bù shǎo dōngxi.  
'The dog ruined many things.'

b. *你 别 弄 他 生气。  
*Nǐ bié nong tā shēngqì.  
'Don't make him angry.'

c. *你 一定 要 弄 他 写 一 篇 文章。  
*Nǐ yīdìng yào nong tā xiě yī-piān wénzhāng.  
'You must make him write a paper.'

Nongde is on the other hand a causative verb by our definition. It can take a state or an action in Event 2, e.g.:

(17) a. 小 孩 子 弄 得 地 上 真 脏。  
Xiǎohaīzi nongde dìshàng zhēn zāng.  
'The children made the floor really dirty.'
b. 你弄得老李瞪着眼一直看你。
    Nǐ nòngde Lǎo Lǐ dèngzhe yǎn yìzhī kàn nǐ.
    'You behaved such that Lao Li kept staring at you.'

c. 那场雨弄得大家都湿透了。
    Nà-cháng yǔ nòngde dàjiā dōu shī-tòule.
    'The rain made everyone soaking wet.'

d. 蛀牙弄得他整天喊痛。
    Zhùyá nòngde tā zhèngtiān hàn tòng.
    'His decayed tooth made him in great pain all day.'

(17a) is an Agent-Patient sentence, (b) Agent-Agent, (c) Patient-Patient, and (d) Patient-Agent. It is difficult to determine whether it can correspond to shì, for example, as a causative verb or it is syntactically composed of the verb nòng plus the extent marker de, corresponding to,

(18) a. 我说得他很窘。
    Wǒ shuōde tā hěn jiǒng.
    'I talked in such a way that he was embarrassed.'

b. [我说 x] 得 [他很窘]
    [Wǒ shuō X] extent [Tā hěn jiǒng]

which consists of a matrix sentence containing shuo and a complementation sentence containing the verb jiong, as illustrated in (18b). We shall leave this as an open issue in this paper.

Shide, analysed as a single verb, is also a causative verb by our definition. Compare the following sentences.

(19) a. 他的话使得我很感激。    (Patient-Patient)
    Tāde huà shìde wǒ hěn gànjì.
    'What he said made me very grateful.'

b. 我一定要使得他心服口服。
    Wǒ yídǐng yào shìde tā xīnfu-kǒufú.
    'I must make him completely convinced.'

c.* 你一定要使得他睡一会儿。
    *Nǐ yídǐng yào shìde tā shuì yīhuìr.
    'You must make him sleep a while.'

d.* 那次旅行使得他说一口流利的西班牙话。
    Nàcì lǚxīng shìde tā shuō yīkǒu liúlìde Xībānyá-huà.
    'That trip enabled him to speak fluent Spanish.'
Shide is compatible with states (a & b) but not actions (c & d). It is quite different from shi in this regard and thus should not be derived from shi plus the extent marker de.

D. 让 rang₁ and 让 rang₂

Of the three causative verbs covered in this paper, shi is the only one that cannot occur in Agent-Agent sentences. In this section, we shall concentrate on the various meanings associated with rang sentences.

It was noted in Lü (1981:406) that the sentence (20a) is three-way ambiguous, as indicated by the translation (b-d).

(20)  a. 我让他说了几句。
      Wó ràng tā shuō le jījù.
      'I had him say a few words.'
    b. 'I let him say a few words.'
      (rang₁)
    c. 'I let him say a few words.'
      (rang₂)
    d. 'I got criticised by him.'

(20d) is a passive sentence and will not concern us further. Northern speakers of Mandarin make a clear distinction between meaning (b) and (c), though southern speakers, especially in Taiwan, lack the interpretation in (b). We shall follow northern speakers and distinguish rang₁ as in (b) and rang₂ as in (c).

As far as meaning is concerned, rang₂ is quite straightforward and is not very different from its English counterpart 'let.' We shall define its meaning as given in (21).

(21)  Rang₂: Agent₁ concedes to the will of Agent₂.

   a. 把门的让他进去。(cf. Chappell 1983:239)
      Bǎnménde ràng tā jìn-qù.
      'The doorman let him in.'
   b. 他不让他儿子看电视。
      Tā bù ràng tā de érzi kàn diànnshi.
      'He would not let his son watch the TV.'

The feature 'concession' is crucial in the definition of rang₂, as it is presupposed that Agent₂ has a desire to do something prior to the action by Agent₁. Chappell, however, defines it as 'The causer is able to but does not
want to prevent the causee from the beginning to do what s/he wants' (1983:242).

Rang₁ is, on the other hand, much more complex. We shall define its basic property as given in (22).

(22) **Rang₁**: Agent authorises Agent₂ to act.

a. 金生让灵芝接着说完，灵芝便 ... (BU 1982:372)
   Jǐnshēng ràng Lingzhī jiē-zhe shuō-wán, Lingzhī biàn ...
   'Jinsheng had Lingzhi continue on; so then Lingzhi ...'

b. 她身体好了以后，领导上让她到
   Tā shēngtǐ hào le yǐhòu, lǐngdǎoshàng ràng tā dào
   中央民族学院学习. (Liu 1983:452)
   Zhōngyāng Mínzú Xuéyuàn xuéxí.
   'After she recovered, her superiors had her attend the
   National Minorities College.'

The key property of rang₁ is 'authority', which will be discussed in greater length in Section F. Unlike the case of rang₂, there is no presupposition that Agent₂ has a desire to do something prior to action of Agent₁. Only remotely does rang₁ resemble the English causative verb 'have.' Chappell oversimplifies the matter and defines it as 'The causer asks the causee to do something.' (1983:237)

We shall deal with the meaning of rang₁ more thoroughly in Sections E-G, and concentrate instead on the syntactic differences between it and rang₂ in this section. First, only rang₂ can be negated, e.g.:

(23)  a. 把门的不让他进去。
    Bǎmén de bù ràng, tā jìn-qù.
    'The doorman would not let him in.'

b. *金生不让灵芝接着说完。
    Jǐnshēng bù ràng, Lingzhī jiē-zhe shuō-wán.
    'Jinsheng did not have Lingzhi continue on.'

In this regard, rang₁ is quite different from English 'have,' which can be negated (cf. the translation of 23b).

Second, even though in the definition of rang₂, i.e. 'Agent₁ concedes to the will of Agent₂,' it is perfectly feasible for Agent₂ to have a negative will (i.e. a desire not to do something), in actual language use, Agent₂ can rarely
be a negative act. \textit{Rang}_2 is not restricted in the same fashion. Compare the following.

(24) a. *把门的让他不进去。 
*Bānmén de ràng\textsubscript{2} tā bù jìn-qù. 
*'The doorman let him not in.'

b. *学校让我不教书。 
*Xuéxiào ràng\textsubscript{2} wǒ bù jiào shū. 
*'The school let me not teach.'

c. 他让我别出声。 
Tā ràng\textsubscript{1} wǒ bié chū shēng. 
'He let me not say anything.'

While \textit{ràng\textsubscript{1}} can be followed by a negative act, English 'have' can not (cf. 24c and its English translation). Thus negation by means of \textit{bù} can always disambiguate between \textit{ràng\textsubscript{1}} and \textit{ràng\textsubscript{2}}, but \textit{méi} negation is again ambiguous, e.g.:

(25) a. 他没让我回答那个问题。 
Tā méi ràng wǒ huídá nèi-ge wèntí. 
'He did not let me answer that question.'

b. 他没让我在这儿等人。 
Tā méi ràng wǒ zài zhèr děngrén. 
'He did not let me wait here for someone.'

Third, only 'ràng\textsubscript{1}' can take an Event\textsubscript{2} that is an imperative sentence, e.g.

(26) a. 他让我别修车了。 
Tā ràng\textsubscript{1} wǒ bié xiū chē le. 
*'He had me not work on a car.'

b. 他让我别修车了。 
Tā ràng\textsubscript{2} wǒ bié xiū chē le. 
*'He let me not work on a car.'

This particular property of \textit{ràng\textsubscript{2}} can of course be accounted for by the second syntactic difference given above, i.e. no negation in Event\textsubscript{2}. But without \textit{bié} in the embedded sentence, it would be difficult to determine the occurrence of imperative sentences on the surface.
The distinction between rang₁ and rang₂ is thus clear both semantically and syntactically. It is not clear why rang₁ is not used by Mandarin speakers in the south. Furthermore, whether or not rang₁ corresponds to the English causative verb 'have' is not certain (cf. Chappell 1983). This last issue will be elaborated directly below.

E. Action vs. Result.

Chappell (1983) postulates that rang₁ corresponds in general terms to English 'have' and jiao to 'make'. In the section below, we shall look at some arguments against such a postulation. In section D it was noted that rang₁ can not be negated (cf. 23b) and further that rang₁ can take a negative Event ₂ (cf. 24c). The English causative verb 'have' is not restricted by either property. In what follows, we shall compare the similarities and differences concerning the pairs rang₁ 'have' and jiao 'make' in non-syntactic properties.

An event can be analysed as consisting of an activity and, in some cases, a result. For example, 'look' is only an activity, whereas 'found' is both activity and result (see Vendler 1967). In this connection, rang₁ is only an activity without containing any result, whereas 'have' entails a result (in Event ₂); so that from the sentence,

(27) 老师让他回答那个问题。
    Lǎoshī ràng tā huǐdā nèi-ge wèntí.
    'The teacher had him answer that question.'

it does not necessarily follow that he did answer the question, when its English translation does imply that he did. This can be clearly seen in (28).

(28) a. 老师让他回答那个问题，可是他不肯。
    Lǎoshī ràng tā huǐdā nèi-ge wèntí, kěshì tā bù kěn.
    '**The teacher had him answer that question, but he refused.'

b. 他让秘书打封信，可是她不肯。
    Tā ràng mishū dà fēng xìn, kěshì tā bù kěn.
    '**He had his secretary type a letter, but she refused.'

The sequence (a) and (b) are perfectly grammatical in Chinese, but their English counterparts are not. Thus rang₁ alone does not force a perfective reading of Event ₂, as 'have' does. On the other hand, in rang₁ sentences,
Event 2 can take a perfective aspect independently, whereas 'have' does not allow this, e.g.

(29)  a. 老师让他回答了那个问题。
Lāoshī ràng tā huídále nèi-ge wèntí.
'*The teacher had him answered that question.'

b. 他让秘书打了封信。
Tā ràng mishù dāle fēng xìn.
'*He had his secretary typed a letter.'

These sentences are necessarily perfective in interpretation. Compare the following.

(30)  a.*老师让他回答了那个问题，可是他不肯。
*Lāoshī ràng tā huídále nèi-ge wèntí, kēshì tā bù kěn.
'*The teacher had him answer that question, but he refused.'

b.* 他让秘书打了封信，可是她不肯。
*Tā ràng mishù dāle fēng xìn, kēshì tā bù kěn.
'*He had his secretary type a letter, but she refused.'

Similarly, jiao behaves exactly like rang1 in this regards, unlike its alleged counterpart 'make'. jiao sentences are only activities, e.g.

(31)  老师叫学生擦黑板，可是他们不肯。
Lāoshī jiào xuéshēng cā hènbǎn, kēshì tāmen bù kěn.
'The teacher asked the students to erase the blackboard, but they refused.'

Jiao sentences also allow perfective in Event 2, e.g.

(32)  a. 老师叫学生写了一篇作文。
Lāoshī jiào xuéshēng xiěle yì-piān zuòwén.
'*The teacher asked the students 'written' composition.'

b.*老师叫学生写了一篇作文，可是他们不肯。
*Lāoshī jiào xuéshēng xiěle yì-piān zuòwén, kēshì tāmen bù kěn.
'*The teacher asked the students 'written' composition, but they refused.'

From the above, we can see that it is quite inappropriate to postulate that
But this objection only holds in Agent-Agent sentences. It is entirely a different matter in the case of Agent/Patient-Patient sentences (cf. 12&14).

F. Hierarchy of Authority.

The relationship between Agent 1 and Agent 2 in causative sentences is a complex one. In English, for example, as detailed in Goldsmith (1984), 'have' causative sentences must follow some pattern of authority in relation to Agent 1 and Agent 2, such that Agent 1 must be in a position of authority over Agent 2 in a given context. The notion 'authority' is relative and contextual, never absolute. Compare the sentences below.

(33) a. The senator had/got/made his secretary type a letter.
   b. Ms. Ray, a secretary, *had/got/made the senator type a letter for her.

In this regard, ranq1 resembles 'have'. In most, if not all, ranq1 sentences cited in existing literature, Agent 1 is in a position of authority over Agent 2 to have the latter implement the activity concerned. Below are some examples.

(34) a. 老师让谁回答问题，谁回答；不要乱说话。
   Lǎoshī ràng shéi huídá wèntí, shéi huídá, bù yào luàn shuō huá.
   (Liu 1983:453)
   'Whoever the teacher asked to answer the question should answer; nobody should talk without being asked to.'
   b. 领导上让我来看看您老人家。(Liu 1983:455)
   Lǐngdào shàng ràng wǒ huílái kànkan nǐ lǎo rénjiā.
   'My leader had me come back to see you.'
   c. 领导上让我干什么，我从来也没有说过不字。
   Lǐngdào shàng ràng wǒ gàn shénme, wǒ cónglái yě méiyǒu shuō guò 'bù' zì. (BU 1982:372)
   'What ever my leader had me do, I've never said 'no'.'

The roles in questions above are 'teacher' vs. 'student' and 'leadership' and 'those lower in ranks'. If the roles are reversed, social disorder results, e.g.:

(35) a.*学生让老师再解释一下。
    *Xuéshēng ràng lǎoshī zài jiěshì yīxià.
    *The students had his teacher explain again.
    b.*小女孩让妈妈把衣服给她穿上。
    *Xiǎo nǚhái ràng māmā bā yīfú gěi tā chuān-shàng.
    '*The little girl had her mother put her clothes on for her.'
Jiao, like 'make,' on the other hand, does not have to obey this hierarchy. Compare (36) with (35).

(36)  a. 学生叫老师再解释一次。
Xuěshēng jiào lǎoshī zài jiěshì yī-cì.
'The students asked the teacher to explain again.'

b. 小女孩叫妈妈把衣服给她穿上。
Xiǎo nǚhái jiào māmā bā yīfú gěi tā chuān-shàng.
'The little girl asked her mother to put her clothes on for her.'

At worst, (36a) and (b) may be inappropriately worded.

G. Degree of Coerion.

In Goldsmith (1984), it is stated that 'When the lower subject, the causee, does not take on the will of the upper subject, the causer, then 'make' is used' (p. 122). In other words, 'make' has the strongest degree of coercion among the causative verbs. Compare the following.

(37) They would not eat anything; so I had to
    a. have them (do it).
    b. get them (to do it).
    c. make them.

Following Chappell's postulation that jiao corresponds to 'make,' we would expect of jiao a similar degree of coercion, but this is not so in Chinese. Neither of the sequences in (38) is grammatical.

(38) 他们什么都不吃；我只好
Tāmen shénme dōu bù chī; wǒ zhīhǎo
'They would not eat anything; (so) I could only
    a.*让他们吃。
* ràng tāmen chi.
    have them eat.'

    b.*叫他们吃。
* jiào tāmen chi.
    ask them to eat.'
Thus neither *rang* nor *jiao* has any force of coercion. Of course, coercive verbs do exist in Chinese, as in,

(39)  

   a. 我只好强迫他们吃。
       Wǒ zhǐhǎo qiǎngpò tāměn chī.  
       'I could only force them to eat.'
   
   b. 我只好逼他们吃。
       Wǒ zhǐhǎo bī tāměn chī.  
       'I could only force them to eat.'

but these are not causative verbs in our definition.

The discussions above indicate that *rang* and *jiao* do not correspond to 'have' and 'make' in English respectively.

H. Final Remarks.

There are two issues that have not been adequately dealt with in the sections above. First, how is the overlapping between causative verbs and pivotal verbs to be accounted for? Second, what is the relationship between causative and passive?

Pivotal verbs (Chao 1968) are those that occur as the first main verbs in indirect imperative sentences, as shown in (40) below (also cf. 5).

(40)  

   a. 学校要求学生使用文明语言。
       Xuéxiào yāoqǐu xuéshèng shìyòng wénmíng yǔyán.  
       'The school required the students to employ civilized language.'
   
   b. 学校禁止学生随地吐痰。
       Xuéxiào jìnzhǐ xuéshèng suídì tǔtán.  
       'The school forbids the students from spitting.'

These sentences share the same surface structure as Agent-Agent causative sentences, and many linguists treat the latter as members of the former (cf. Liu 1983:448-449). We have presented syntactic differences in Section B, but the differences relate only to Agent-Patient sentences. If pivotal sentences are ultimately relatable to simple imperatives, the relationship also holds for Agent-Agent causatives for all pragmatic purposes. For instance, if (40a) and (b) are relatable to (41a) and (b), i.e.
(41)  a. 你们要使用文明语言!
    Nǐmén yào shìyòng wénmíng yǔyán!
    'You must use civilized language!'
    
   b. 你们不许随地吐痰!
    Nǐmén bù xǔ suídì tǔtán!
    'You must not spit!'

(42) should also be related to (43).

(42)  a. 咱们先让大伙儿提提意见。
    Zànmén xiān ràng dàhuòr tí tíjiàn.
    'Let's have everyone make suggestions first.'
    
   b. 他叫你们别互相残杀。
    Tā jiào nímén bié hùxiāng cánshā.
    'He asked/wanted you not to get on each other's nerves.'

(43)  a. 你们提提意见!
    Nímén tí tíjiàn!
    'Make some suggestions!'
    
   b. 你 们别互相残杀!
    Nímén bié hùxiāng cánshā!
    'Don't get on each other's nerves!'

If this is the case, the real differences between pivotal sentences and our Agent-Agent causative sentences are merely semantic.

Second, jiào and ràng not only occur in causative sentences but also in passive sentences as well. Compare the following pairs of sentences.

(44)  a. 我让孩子捎个口信儿。
    Wǒ ràng háizi shāo gè kǒu-xìnr.
    'I'll have my child bring a message.'
    
   b. 他又让人请去盖房子去了。
    Tā yòu ràng rén qǐng qù gài fángzi qù le.
    'He has again been sent for to build a house.'

(45)  a. 医生叫他多休息。
    Yīshēng jiào tā duō xiūxī.
    'The doctor asked him to have more rest.'
(41) a. 你们要使用文明语言！
Nǐmén yào shǐyòng wénmíng yǔyán!
'You must use civilized language!'
b. 你们不许随地吐痰！
Nǐmén bù xǔ suídì tǔtán!
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(42) a. 咱们先让大伙儿提提意见。
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Tājiào nǐmén bié xiāngxiàng cánsà.
'He asked/wanted you not to get on each other's nerves.'

(43) a. 你们提提意见！
Nǐmén tí tí yìjiàn!
'Make some suggestions!'
b. 你们别互相残杀！
Nǐmén bié xiāngxiàng cánsà!
'Don't get on each other's nerves!'

If this is the case, the real differences between pivotal sentences and our Agent-Agent causative sentences are merely semantic.

Second, jiao and rang not only occur in causative sentences but also in passive sentences as well. Compare the following pairs of sentences.

(44) a. 我让孩子捎个口信儿。
Wǒ ràng háizi shāo ge kǒu-xìng.
'I'll have my child bring a message.'
b. 他又让人请去盖房子去了。
Tā yòu ràng rén qǐng qù gài fāngzì qù le.
'He has again been sent for to build a house.'

(45) a. 医生叫他多休息。
Yīshēng jiào tā duō xiūxī.
'The doctor asked him to have more rest.'
b. 他又叫村长派去监工了。
Tā yǒu jiào cūnzhǎng pài qù jiān gōng le.
'He has again been sent by the village head to supervise the work.'

In the (a) sentences, the subjects are Agents, and in the (b) sentences, the subjects are the Agents of the embedded sentences. Recall that 'shì' cannot occur in Agent-Agent sentences (see 11c), and this may be related to the fact that 'shì' cannot occur in passive sentences as well. Exactly why the above has to be so is not clear. In English, on the other hand, 'get' is the only causative verb that may also function as a passive verb without resorting to the passive construction. e.g.

(46)  a. John got criticized at the meeting.
       b.* Mary made the Dairy Queen at the convention.

The exact relationship between causative and passive sentences remains to be investigated in future study.

References

Topic and the Lian . . . Dou/Ye Construction Revisited

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1. A Brief Review of the Previous Analyses

Various Chinese linguists have in the past touched upon the lian construction. In my book, *A Functional Study of Topic in Chinese: The First Step Toward Discourse Analysis* (Tsao, 1979), I mistakenly took the constituent that occurs after lian in this construction as a focus and briefly discussed how it can be distinguished from a regular topic NP when they both occur in the sentence-initial position. Tang (1977) compares what he calls lian movement rule with topicalization and object fronting rules. His conclusion is that they are basically three different rules, even though they do have some grammatical properties in common. By far the most detailed analysis of the construction was done by Paris (1979). In her paper she has found several important generalizations that have been neglected in the previous discussion. Finally, Li and Thompson (1981) in their grammar briefly summarize the important properties that this construction has been found to possess.

There are, of course, other people who have touched upon this construction before, but I think the four sources that I just mentioned are representative and only those four will be reviewed in the following. As Li and Thompson's discussion, though brief, was the most general, we will naturally begin with it.

1.1 Li and Thompson's Analysis

Li and Thompson's grammar (1981) devotes only two pages to the discussion of this construction. Their succinct discussion will be briefly summarized and then commented upon. They characterize the construction in the following terms:

The lian . . . dou/ye construction singles out one part of the sentence with the meaning of 'even.' It is formed by putting the particle lian before the element being singled out. This element must occur at some point in the sentence before dou (or ve, which is interchangeable with dou), but not necessarily immediately before it (p. 338).
They further point out that if the lian constituent is not the subject/topic itself, then, the lian phrase can occur in two different places without any change of meaning, as exemplified by (a) and (b) in (1).

(1) a. 我连他都不喜欢。
    Wǒ lián tā dōu bù xǐhuān.
    'I don't even like him.'
    b. 连他我都不喜欢。
    Lìan tā, wǒ dōu bù xǐhuān.
    'Same as (a)'

Finally, they point out that the lian constituent can be a verb phrase or a coverb phrase as exemplified by (2) and (3).

(2) 他连打字都不会。
    Tā lián dǎ-zi dōu bù hui.
    'He doesn't even know how to type.'
(3) 他连跟他们女儿都不说话。
    Tā lián gēn tā nüèr dōu bù shuō-huà.
    'He doesn't even speak to his daughter.'

This characterization of theirs is quite neutral and, as far as it goes, quite accurate. There are, however, two points that need clarification. First, it is, strictly speaking, not accurate to describe the lian constituent in (2) as a verb phrase. We have ample evidence to show what originated as a VP is here nominalized and functions like an NP. Examine the following parallel examples.

(4) a. 他不喜欢打字。
    Tā bù xǐhuān dǎ-zi.
    'He doesn't like typing.'
    b. 他打字不喜欢。
    Tā dǎ-zi bù xǐhuān.
    'As for him and as for typing, he doesn't like it.'
c. 他连打字都不喜欢。
   tā lián dǎ-zi dōu bù xǐhuān.
   'He doesn't even like typing.'

d. 打字他不喜欢。
   dǎ-zi tā bù xǐhuān.
   'As for typing, he doesn't like it.'

e. 连打字他都不喜欢。
   lián dǎ-zi tā dōu bù xǐhuān.
   'As for typing, he doesn't even like it.'

It is clear from (4a) that da-zi 'typing' is here the object of the transitive verb xǐhuān 'like' and is therefore an NP. Furthermore, like many object NPs, it can occur between the primary topic and the main verb to become what I now call a secondary topic as in (4b) (See Tsao, 1987a, 1987b, and ms.). And as a secondary topic, it can be further promoted to become the primary topic as in (4d). Note also that it is only when the phrase occurs as a topic, primary or secondary, will it be possible for it to be preceded by lián 'including' in a lián construction. Holding back our judgment as to whether the lián constituent should be treated as a topic NP, we can, on the basis of the evidence presented so far at least see that da-zi 'typing' in (2) as well as in (4c) and (4e) is definitely an NP.

Our second comment has to do with the statement that the construction 'singles out one part of the sentence with the meaning 'even' in the passage just quoted. The statement is not quite accurate as far as the main verb of a sentence is concerned. Compare (5b) with (5c).

(5) a. 他喜欢李四。
   tā xǐhuān LǐSì.
   'He likes Li Si.'

b. 他连李四都喜欢。
   tā lián LǐSì dōu xǐhuān.
   'He even likes Li Si.'

c. *他连喜欢都李四。
   *tā lián xǐhuān dōuLǐSì.
Unlike the object, the main verb of the sentence cannot be freely singled out to be the lian constituent and neither can the whole VP as shown by (c) and (d) sentences respectively. It is only in certain constructions as in (6) that a constituent that is in some sense a verb can be placed in the slot.

(6) 他连睡都不睡。
    tā lián shuì dōu méi shuì.
    he including sleep all not sleep
    ‘He didn’t even sleep at all.’

We will, in a later section, give an explanation as to why this should be so.

1.2. Paris’ Analysis

Paris (1977) gives a rather extensive discussion of this construction. She starts out by pointing out the inadequacies of what she calls ‘traditional analyses’ of the construction as represented by Guo Yi-zhou (1957), Ding Sheng-shu et al. (1961) etc. Then she takes up the syntax of the construction by providing arguments against the treatment of lian as a preposition. She also points out that Hagege’s proposal (1975) that lian be treated as a focalizer cannot be correct even on his own terms. Furthermore, she argues that the lian constituent cannot be transformationally derived. We will discuss her arguments in connection with Tang’s analysis. At this point, it suffices to point out that her finding, that all types of the lian constituent are either the regular noun phrase or other types of constituents having a great deal of nominal quality is in the main correct. We will take up this issue in some detail later on, too.

In the latter half of her paper, Paris characterizes the semantics of the construction. Her proposal is to treat lian as a quasi-quantifier and dou/ye as quantifiers. The interaction of these two provides us with the meaning of ‘even.’ We will postpone until later on the examination of the details of her arguments. Right now let us simply point out that even though she has gone farther than any previous attempt in her characterization of the semantic function of the construction, her proposal to treat lian as a quasi-quantifier is apparently quite ad hoc because it is the sole member of this category in Chinese grammar. More importantly, because she fails to see the parallel existing between the lian constituent and other types of NPs that I have at
various places (Tsao, 1982, 1987a, 1987b, and ms.) characterized as secondary topics such as the ba NP in the ba construction as in (7a), the fronted object NP as in (8a), the second NP in the double nominative construction and the fronted VP in the so-called verb-copying construction as in (9a) and (10a) respectively, she fails to reveal the true nature of the lian constituent. Compare the (a) and (b) sentences in the following.

(7) a. 他把张三请来了。
    tā bà Zhāng Sān qǐng-lái le.
    he BA Zhang San invite-come PART
    'He invited Zhang San to come.'

    b. 他连张三也请来了。
    tā lián Zhāng Sān yě qǐng-lái le.
    he including Zhang San also invite-come PART
    'He even invited Zhang San to come.'

(8) a. 他球打破了。
    tā qiú dǎ-pò le.
    he ball hit-break PART
    'He broke the ball.'

    b. 他连球都打破了。
    tā lián qiú dōu dǎ-pò le.
    he including ball all hit-break PART
    'He even broke the ball.'

(9) a. 他鼻子很好看。
    tā bízi hěn hǎokān
    he nose very good-looking
    'He (topic), his nose is very handsome.'

    b. 他连鼻子都很好看。
    tā lián bízi dōu hěn hǎokān
    he including nose all very good-looking
    'As for him, even his nose is handsome.'

(10) a. 他照相照得很好。
    tā zhào-xiàng zhào de hěnhǎo.
    he take-picture take PART very well
    'As for him and as for taking pictures, he is very good.

    b. 他连照相都照得很好。
    tā lián zhào-xiàng dōu zhào de hěnhǎo.
    he including take-picture all take PART very well
    'As for him, even taking pictures he does it well.'
1.3. Tsao's Previous Analysis

Actually such an oversight was not committed by Paris alone, Tsao (1979) was misled by the stress associated with the lian constituent into analyzing the lian constituent as in (11), as a focus and thus failed to see its true nature.

(11) 连四书他们也买得很多。
    lián Sì-shū tāmén yě mǎi de hěn duō.
including Four-books they also sell PART very many
 'Even Four-books, they sold a great many of them.'

As a matter of fact, in the same book (Tsao, 1979), Tsao already found out that topics can be stressed when they are contrastive. Since the meaning of lian in conjunction with dou/ye requires that the lian constituent to be always, explicitly or implicitly, in contrast, the fact that there is always a stress associated with it is therefore no argument against treating it as a topic.

1.4. Tang's Analysis

Tang (1977) proposes to treat the lian constituent as an NP that has been moved to the slot by a fronting transformation. He, however, doesn't give a formal rule to account for the movement. As Paris (1977) has already presented two convincing reasons against such a derivational theory, we'll simply summarize her arguments below, adding any comment as we think fit.

First, there are cases where the lian constituent has no underlying source. (12a) and (13a) could not be derived from (12b) and (13b) respectively since (12b) and (13b) are both ungrammatical.

(12a) ??连要去搬开它也抬不起手来。
    Wěi ... lián yào qù bān-kāi tā yě tái bù qǐ shǒu lái.
    Wei including want to move it also raise not up hand PART
 '... even if she wanted to move it, Wei could not raise her hand.'

b. ??连抬不起手来去搬开它。
    *Wěi tái bù qǐ shǒu lái yào qù bān-kāi tā.
    Wei raise not up hand PART want to move it

(13a) 他连一次也没来。
    tā lián yī-ci yě méi lái.
he including one-time also not come
 'He did not come even once.'
b. 他没来一次。
*ta mei lai yi-ci.
he not come one-time

Second and more importantly, lian movement transformation sometimes produces a drastic change in the meaning of a sentence. Compare (14a) with (14b).

(14) a. 李四没喝一杯茶。
Li Si meihe yi-bei cha
Li Si not drink one-cup tea
'Li Sì didn't drink a cup of tea.'
b. 李四连一杯茶也没喝。
Li Si lian yi-bei cha ye mei he
Li Si including one-cup tea also not drink
'Li Sì didn't drink any tea at all.'

While (14a) normally means that Li Sì drank some tea but the quantity was not up to one cup, (14b) means that he didn't have any tea at all.

One special feature of Tang's analysis is that he actually goes into a comparison of the lian fronting, topicalization and object fronting rules. He, however, concludes that the former, though having some properties in common with the latter two, is an independent rule. Even though there are many problems with Tang's approach to the construction, he should be given the credit of seeing that the lian constituent is in some way related to a primary topic as produced by topicalization in his framework and to a secondary topic as produced by his object fronting rule.\(^5\)

2. The Nominal Nature of the lian Constituent

One of the greatest controversies in the past discussion of this construction has to do with the nature of the element that occurs after lian. In order not to bias the reader we have up to this point used 'constituent' to refer to it and will continue to do so until we can positively identify what it is.

Paris' paper referred to earlier (1977) contains a section exclusively devoted to this topic. Since her arguments are in general convincing, we will present a summary of her discussion in the following, adding our comment whenever necessary.
Paris (1977: 55) first gives a quite exhaustive list of the kinds of elements that occur as a lián constituent. According to her, the lián constituent can be:
(i) regular NPs as in (15) and (16); (ii) VPs as in (17) and (18); (iii) PPs as in (19) and (20); (iv) time adverbials as in (21); (v) whole or reduced subordinate clauses as in (22) and (23); (vi) predicate nominals as in (24) and (25); and (vii) the first part of a reduplicated VP as in (26).

(15) 连他也听不懂我的话。
lián tā yě tīng-bù-dōng wǒ-de
including he also listen-not-understand my
word
'Even he doesn't understand my words.'

(16) 他连我的话也听不懂。
tā lián wǒ-de huà yě tīng-bù-dōng.
(object NP)
he including my word also listen-not-understand
'He didn't even understand my words.'

(17) 人们似乎连肚子饿都忘记了。
rénmén sīhū lián dùzi è dōu
people seem including stomach hungry all
wǎngjí le. (VP)
forget PART
'People seem to have forgotten that they were hungry.'

(18) 他连唱歌都不会。
tā lián chāng-gē dōu bú huì. (VP)
he including sing-song all not know-how
'He doesn't even know how to sing.'

(19) 他在什么地方都不吃，连饭馆都不吃。
tā zài shénmedífāng dōu bú chī, lián
he at any place all not eat including
zài fànguǎn dōu bú chī. (PP)
at restaurant all not eat
'He doesn't eat anywhere, even in restaurants.'

(20) 张太太不好，她连对她女儿都不说一句话。
Zhāng tāitāi zhēn bù hǎo; tā lián dui
Zhang Mrs. really not good she including to
tā-de nüèr dōu bú shuō yī-jū huà. (PP)
her daughter all not say one-CL word
'Mr. Zhang is really unpleasant; she doesn't even speak to her
daughter.'
(21) 他连星期天也来麻烦我。
    tā lián xīngqītiān yě lái máfán wǒ.
    (time adv.)
    he including Sunday also come trouble me
    'Even on Sunday he came to bother me.'

(22) 连你在我们学校里教书，我都同意。
    lián nǐ zài wǒmen xuéxiào-lǐ jiāoshū,
    including you at our school-LOC teach
    wǒ dōu tóngyì. (subordinate clause)
    I all agree
    'I even agree that you teach in our school.'

(23) 连教授作演讲的时候，李四都不停的说话。
    lián jiàoshòu zuò yánjiāng de shíhòu, Lìsì
    including professor make speech DE moment, Lìsì
    dōu bù-tíng-de shuōhuà. (adv. clause)
    all incessantly talk
    'Even when the professor makes a speech, Li Si doesn't stop
talking.'

(24) 他学中文连三个月都没学满。
    tā xué Zhōngwén lián sān-ge yuè dōu
    he study Chinese including three-CL month all
    méixué-mǎn. (predicate nominals)
    not study-full
    'He didn't even complete three months of Chinese.'

(25) 连三个月的中文他都没学满。
    lián sān-ge yuè de Zhōngwén, tā dōu
    including three-CL month DE Chinese he all
    méixué-mǎn. (predicate nominals)
    not study-full
    'Same as (24).'

(26) 他连写字都写得特别好。
    tā lián xiě-zi dōu xiě de
    he including write-character all write PART
    tèbié hǎo. (the first part of a reduplicated VP)
    especially well
    'Even his calligraphy is outstanding.'

Paris (1977: 56) then goes on to show that those elements that are not
regular NPs have all exhibited some nominal qualities. First, Paris points out,
whatever lián is, it cannot precede real VPs as shown in (27); nor can it
precede manner or reason adverbials as shown in (28) and (29).6
(27) *张三连去了邮局。
   *Zhāng Sān lián qù-le yóu-jū
   Zhang San including go-ASP post-office
(28) *李四连很小心都犯了三次错误。
   *Lí Sì lián hěn xiào-xīn dōu fàn-le
   Li Si including very careful all commit-ASP
   sān-cí gòu-wù
   three-CL mistake
(29) *他连为了女朋友都不来上课。
   *tā lián wéi-le nǚ-péngyǒu dōu bú lá
   he including for girl-friend all not come
   shàng-kè.
   take-lesson

She then examines all the elements that can occur after lián in this construction one by one.

(i) Nominalized VPs and Nominal Clauses

Previously in Section 1.1 in our comment on Li and Thompson's characterization of this construction we have demonstrated that it is a misnomer to call da-zì 'hit character' in (4a) VP. Because it has many grammatical properties specific to the NP, it should be more properly called 'nominalized VP.' The same argument applies to chang-ge 'sing-song' in (18) and duzi-e 'stomach hungry' in (17). In addition, Paris (1977) points out that both VPs can be replaced by ordinary NPs as in (30) and (31).

(30) 人们似乎忘记了那件事。
   rénmén sìhū wàngjí-le nèi-jìàn shì.
   people seem forget-ASP that-CL matter
   'People seem to have forgotten the matter.'
(31) 他不会那个字。
   tā bú huì nèi-ge zì.
   he not know that-CL character
   'He doesn't know that character.'

Likewise, the clause in (22), ni zài wùmén xuéxiào-lí jǐào shū 'you teach in our school,' functions like an NP as it is replaceable by a regular NP. Compare (22) with (32).
(32) 我同意这件事。
wǒ tóngyì zhè-jiàn shì.
'I agree to the matter.'

(ii) Adverbial Subordinate Clauses

In (23) the clause jiaoshou zuo yanjiang de shihou 'the time when the professor was making a speech' is a time clause so it seems to be an adverbial clause in function, but in form, as Paris (1977: 56) points out, it is a complex NP whose head noun is determined by a whole S. Its syntactic structure reads as [NP(S de)NP]NP.

(iii) Time Adverbials

Unlike other adverbial phrases, time adverbials behave in many ways like nominals: they cannot be preceded by negative markers as shown in (33); they can function as object of shì in a pseudo-cleft construction as in (34); and they can conjoin like NPs with gen 'and' as in (35).

(33) *他没/不星期天来。
*tā méi/ bù xīngqìtiān lái.
he not Sunday come
'He didn't/doesn't come on Sunday.'

(34) 他来的那一天是星期天。
tā lái de nà yī tiān shì xīngqìtiān.
he come DE that one day be Sunday
'The day he came is Sunday.'

(35) 星期天跟星期五不同。
xīngqìtiān gèn xīngqīwǔ bù tóng.
Sunday and Friday not same
'Sunday and Friday are different.'

(iv) Prepositional Phrases

Paris (1977:57) observes that PPs containing inanimate NPs, like subject and object Nps, are deleted under relativization, and it is on the basis of this observation that she argues that PPs possess nominal quality. This observation, unfortunately, is at best inconclusive as it is made solely on the basis of the behavior of the ba phrase under relativization. Let's examine her examples, reproduced here as (36) and (37).
Her observation is called to doubt for three reasons. First, it is not exactly clear whether ba should be called a preposition. Second, besides (36), (37) can have (38) below as its underlying source, where yifu 'clothes' is clearly an object NP.

(38)

他洗完衣服了。

tā xǐ-wán yīfú le.

'He has washed the clothes.'

Third, this phenomenon is peculiar to the ba phrase. Other prepositional phrases do not exhibit such a characteristic. Compare (37) with (39b).

(39)a. 我在那个大学念了一年书。

wǒ zài nèi-ge dàxué niàn-le yī-nián shū

'I studied at that university for a year.'

b. 我在那儿念了一年书的那一个大学...

wǒ zài nèi-ge dàxué....

'Rel.Mar. that-CL university'

'Ve made a year's study in the university where I studied for a year....'

c. *我那儿念了一年书的那一个大学...

*wǒ nèi-ge dàxué....

'Rel.Mar. that-CL university'

'Same as (b).'
This does not mean, however, that her conclusion is necessarily incorrect. On the contrary, we have evidence to show that it is correct. A prepositional phrase by definition has two constituents: a preposition and a noun phrase. However, under certain as yet unclear conditions, the preposition can be deleted without changing its grammaticality, reducing a prepositional phrase to a noun phrase.\(^8\) Compare (a) and (b) sentences in the following examples.

(40)  a. 在家里他不谈国事。
      zài jiā-lǐ tā bù tán guόngshì. (PP)
      at home-LOC he not talk business
      'At home he doesn't talk about business.'

     b. 家里他不谈国事。
       jiā-lǐ tā bù tán guόngshì. (NP)
       home-LOC he not talk business
       'Same as (a).'

(41)  a. 在那个时候台北还没有电。
      zài nà-ge shíhou Táipí ěi hái méiyǒu diàn. (PP)
      at that-CL time Taipei yet not-have electricity
      'At that time, there was no electricity in Taipei.'

     b. 那个时候台北还没有电。
       nà-ge shíhou Táipí ěi hái méi-yǒu diàn. (NP)
       that-CL time Taipei yet not-have electricity
       'Same as (a).'

It seems that in becoming a topic, the preposition in a prepositional phrase is often deleted. The same phenomenon is observed when many prepositional phrases are placed in the ba or lian constituent, as exemplified by (42b) and (42c) respectively.

(42)  a. 他在壁炉生了火。
      tā zài bìlú shěng-le huǒ. 
      he at fireplace build-ASP fire
      'He build a fire at the fireplace.'

     b. 他把壁炉生了火。
       tā bā bìlú shěng-le huǒ. 
       he BA fireplace build-ASP fire
       '(Roughly) same as (a).' 

     c. 他连壁炉都生了火。
       tā lián bìlú dōu shěng-le huǒ. 
       he including fireplace all build-ASP fire
       'He build a fire even in the fireplace.'

(v) The First Part of a Reduplicated VP
In (26) xie-zí 'write character' has lost much of its verbal quality. Both Li (1975: 880) and Tsao (1987b) point out that xie 'write' in this construction cannot be preceded by a modal verb, or a negative marker; nor can it be suffixed by an aspectual marker. Examine (43), (44) and (45).

(43)  *他会写字写得特別好。
       *tā huì xiě-zí xiě de tèbié hǎo.
       he will write-character write PART especially well

(44)  *他没写字写得特別好。
       *tā méixiě-zí xiě de tèbié hǎo.
       he not write-character write PART especially well

(45)  *他写了字写得特別好。
       *tā xiě-le zì xiě de tèbié hǎo.
       he write-ASP character write PART especially well

Paris (1977: 57) further points out that, like NPs, xie-zí 'write-character' can be placed in the initial position of a sentence and functions like a regular topic as shown in (46).

(46)  写字，张三写得特別好。
       xiě-zí,  Zhāng Sān xiě de tèbié hǎo.
       write-character Zhang San write PART especially well
       'As for calligraphy, Zhang San is very good at it.'

On the basis of this observation and many others, Tsao (1987b) has pointed out that the V + O constituent that occurs at the front part of this construction is actually a secondary topic, which like other types of secondary topics, can all be promoted to become the primary topic as in (46).

This last statement provides us with a very good transition to the next section where we will present many arguments to show that the lian constituent is not only an NP or its equivalent but also, depending on where it occurs in the sentence, a secondary topic or a primary topic.

3. Arguments for Treating the lian Constituent as a Topic.

3.1. The Roles Played by the Regular Topic and Those Played by the lian Constituent Compared.
In Tsao (1979) it is found that the primary topic can play one of following roles in a sentence. It can be the subject, the time adverbial, the locative adverbial, the scope-delimiting phrase. In the case of so-called 'double nominative construction,' it does not play any syntactic role directly. Rather, it bears the semantic relation of possessor-possessed, whole-part or class-member to the second nominal, which is the subject of the clause. To this list, Tsao (1987a, 1987b) has added the following two. The V + O phrase occurring in the first part of a verb-copying construction and the ba phrase in the ba construction can both occur as the secondary or the primary topic of the sentence. With only one exception, in each and every case where a topic, be it primary or secondary, is possible, there is a corresponding lian construction with the topic as the lian constituent. Examine the following parallel cases.

(47)  a. 我不喜欢他。
wǒ bù xīhuān tā. (subject)
'I don't like him.'

b. 我也不喜欢他。
lián wǒ yě bù xīhuān tā.
Including I also not like him.
'Even I don't like him.'

(48)  a. 他，我不喜欢。
tā, wǒ bù xīhuān.
'As for him, I don't like him.'

b. 他，我也不喜欢。
lián tā, wǒ yě bù xīhuān.
Including him I also not like
'Even him, I don't like.'

(49)  a. 昨天你哥哥来看你。
zuótiān nǐ gēge lái kàn nǐ. (time ad.)
yesterday your elder brother come see you
'Yesterday, your older brother came to see you.'

b. 昨天你哥哥也来看你。
lián zuótiān nǐ gēge yě
Including yesterday your elder brother also
come see you
'Even yesterday, your elder brother came to see you.'
(50)  a. 床底下摆满了五侠小说。
    chuáng-dīxià bāi-mān-le wǔxiá xiǎoshuō. (place adv.)
    bed-under place-full-ASP Kungfu novel
    'Under the bed were packed with Kungfu novels.'

   b. 连床底下都摆满了五侠小说
    lián chuáng-dīxià dōu bāi-mān-le wǔxiá xiǎoshuō.
    including bed-under all place-full-ASP Kungfu novel
    'Even under the bed were packed with Kungfu novels.'

(51)  a. 这件事，他写了一份报告。
    zhè-jìàn shì, tā xiě-le yī-fèn
    this-CL matter he write one-CL
    bāogào. (scope-delimiting phrase)
    report
    '(Concerning) this matter, he wrote a report.'

   b. 连这件事他也写了一份报告。
    lián zhè-jìàn shì tā yě xiě-le
    including this-CL matter he also write-ASP
    yī-fèn bāogào.
    one-CL report.
    'Even (with regard to) this matter, he wrote a report.'

(52)  a. 小花，眼睛很好看。
    Xiǎohuā, yǎnjīng hěn hǎo-kàn. (possessor-possessed)
    Xiaohua eye very good-looking.
    'Xiaohua (topic), her eyes are beautiful.'

   b. 连小花眼睛都很好看。
    lián Xiǎohuā yǎnjīng dōu hěn hǎo-kàn.
    including Xiaohua eye all very good-looking
    'Even Xiaohua has beautiful eyes.'

(53)  a. 那五个苹果，两个烂了。
    nà wǔ-ge píngguǒ, liǎng-ge làn-le. (whole-part)
    those 5-CL apple 2-CL rot-ASP
    '(Of) those five apples, two rotted.'

   b. 连那五个苹果也两个烂了。
    ?lián nà wǔ-ge píngguǒ yě
    including those 5-CL apple also
    liǎng-ge làn-le.10
    2-CL rot-ASP
    'Even those five apples, two of them rotted.'

(54)  a. 衣服，新的好。
    yīfú, xīn de hǎo.
    clothes, new good.
b. 连衣服也新的好。
liǎn yīfú yě xīn-de hǎo. 11
including clothes also new-ones good
'Even clothes, new ones are good.'
(55) a. 我把张三叫来了。
wǒ bǎ zhāng sān jiào lái le.
(ba-NP as the secondary topic)
I BA Zhang San call come PART
'I had Zhang San summoned.'

b. 我连张三也叫来了。
wǒ lián zhāng sān yě jiào lái le.
including Zhang San also call come PART
'I even had Zhang San summoned.'

c. 张三啊，我把他也叫来了。
zhāng sān a, wǒ bā tā jiào lái le.
zhang san PART, I BA him call come PART
'Zhang San (topic), I had him summoned here.'
d. 连张三啊，我都把他也叫来了。
lián zhāng sān a, wǒ dōu bā tā jiào lái le.
including Zhang San PART I all BA him call come PART
'Even Zhang San, I had him summoned.'

(56) a. 他作文作得很快。
tā zuò-wén zuò de hěn kuài.
he write-composition write PART very fast
'He is quick at writing compositions.'

b. 他连作文都作得很快。
tā lián zuò-wén dōu zuò
including write-composition all write
he de hěn kuài.
PART very fast
'He is quick at even writing compositions.'

c. 作文啊，他作得很快。
zuò-wén a, tā zuò de hěn kuài.
write-composition PART he write PART very fast
'Speaking of writing compositions, he is very quick.'

d. 连作文啊，他都作得很快。
lián zuò-wén a, tā dōu zuò
including write-composition PART he all
zuò de hěn kuài.
write PART very fast
'Even writing compositions, he is quick at it.'
The parallelism here is simply too striking to be missed. The parallelism, however, does not stop here. If we turn our attention to cases where certain constituents cannot become topics, we find striking parallelism as well. We mentioned earlier that according to Paris (1977), only manner adverbials cannot become lian constituents. The same constraint is found in the case of the primary topic. Compare (b) and (c) sentences in the following.

(57)  a.  他很快地走过了那个地方。
    tā hěnkùài-de zǒu-guó-le nà-ge dìfāng.
    he very quickly walk-pass-ASP that-CL place
    'He walked past the place very quickly.'
    b.  *很快地啊，他走过了那个地方。
        *hěn kuáide a, tā zǒu-guó-le nà-ge dìfāng.
        very quickly PART he walk-pass-ASP that-CL place
    c.  *连很快地，他都走过了那个地方。
        *lián hěnkùài-de, tā dōu
        including very quickly he all
        zǒu-guó-le nà-ge dìfāng.
        walk-pass-ASP that-CL place

In addition, for any post-verbal constituent such as object to become a topic it is necessary that the constituent be moved to a pre-verbal position. Likewise, it is necessary for any post-verbal constituent to be moved to a pre-verbal position before it can become a lian constituent. Examine the following sentences.

(58)  a.  他昨天请张三了。
    tā zuótiān qǐng Zhāng Sān le.
    he yesterday invite Zhang San PART
    'He invited Zhang San yesterday.'
    b.  *他昨天请张三啊，了。
        *tā zuótiān qǐng Zhāng Sān a, le.
        he yesterday invite Zhang San PART PART
    c.  *他昨天都请连张三了。
        *tā zuótiān dōu qǐng lián Zhāng Sān le.
        he yesterday all invite including Zhang San PART

3.2. The Grammatical Qualities of the Regular Topic and Those of the lian Constituent Compared

Tsao (1979: 88), after a careful and detailed examination of all the grammatical qualities that topic may have, comes up with the following list:13
(59)  a. Topic invariably occupies the clause-initial position of the first clause in a topic chain.
   b. Topic can optionally be separated from the rest of the clause, in which it overtly occurs by one of the following four pause particles: a(ya), ne, me and ba.
   c. Topic is always definite or generic in reference.
   d. Topic can have the interclausal function of extending its semantic domain to more than one clause.
   e. Topic is in control of the pronominalization or deletion of all the coreferential NPs in a topic chain.
   f. Topic, except in clauses in which it is also subject, plays no role in such processes as reflexivization, passivization, Equi-NP deletion and imperativization.

(59f) involves quite a few processes, the test of all of which will certainly take us far afield. We will therefore only take reflexivization as an example.

(60)  a. 李四啊，张三喜欢他。
       Lì Sì a,   Zhāng Sān xǐhuān tā.  
       (object NP as topic)  
       Li Sì PART Zhang San like him  
       'Li Sì (topic), Zhang San likes him.'
   b. *李四啊，张三喜欢他自己。
       *Lì Sì a,   Zhāng Sān xǐhuān tā-zíji.  
       Li Sì PART Zhang San like he-self
   c. 连李四啊，张三都喜欢他。
       Lìán Lì Sì a,   Zhāng Sān dōu xǐhuān tā  
       including Li Sì PART Zhang San all like him  
       'Even Li Sì, Zhang San likes him.'
   d. *连李四啊，张三都喜欢他自己。
       *Lìán Lì Sì a,   Zhāng Sān dōu xǐhuān tā-zíji.  
       including Li Sì PART Zhang San all like he-self

If we compare (a) with (c) and (b) with (d) in (60), it is quite apparent that neither the regular nor the lian topic plays any role in reflexivization.

Likewise, it can be easily demonstrated that (59a) is true for the lian constituent, even though, due to its meaning, the lian constituent is seldom found to head a topic chain. Examine (61) and (62).
(61) 连星期天他都去上班，他都不休息。
liàn xīngqītiān, tā dōu qù shàngbàn_ i tā dōubùxiū
including Sunday he all go work, he all not rest
'Even Sunday, he went to work and didn't rest.'

(62) 连墙上都洗的很干净，都漆了好几遍。
liàn qiáng-shàng_ dōu xǐ de hěn
including wall-CL all wash PART very
gānjìng_ i, dōu qí-le hào jī biàn.
clean all paint-ASP several times
'Even the wall was washed clean and painted several times.'

A close examination of (61) and (62) reveals that liàn phrase heads a topic chain of two comments in both cases and the liàn constituent is in control of the NP coreferential pronominalization or deletion in the chain. So (59a, d and e) evidently hold true for the liàn constituent.

Furthermore, the sentences in (63) clearly show that, whether the liàn constituent occurs in the initial position of the highest sentence or not, it can be separated by one of the pause particles.

(63) a. 连他呀/呢数学都不喜欢。
liàn tā ya/me/ne/? ba shùxué dōubùxiū
including himPART math all not like.
'Even he doesn't like math.'

b. 他连数学呀/呢都不喜欢。
tā liàn shùxué ya/me/ne/? ba dōubùxiū
he including math PART all not like
'He doesn't even like math.'

c. 他连数学呀/呢他都不喜欢。
liàn shùxué ya/me/ne/? ba tā dōu bù xiū
including math PART he all not like
'Even math, he doesn't like it.'

It is clear, then, that as far as the behavior described in (59b) is concerned, the liàn constituent parallels the regular topic.

In an affirmative liàn sentence, the liàn constituent always has a definite or generic reference, as demonstrated by (64a) and (64b). An indefinite, non-genric NP cannot occur there without causing ungrammaticality as (64c) shows.
(64)  a. 连那个人都做得了, 何况是你。
    lián  nèi-ge  rèn  dōuzuò-de-liào,
    including that-CL person all do-PART-able
    hékuàng  shì  nǐ.
    not-to-say be you
    'Even that man can do it, not to say you.'

b. 连人都做得了, 何况是神。
    lián  rèn  dōuzuò-de-liào,  hékuàng  shìshén.
    including human all do-PART-able not-to-say be god
    'Even humans can do it, not to say gods.'

c. *连一个人都做得了。
   *lián  yī-ge  rèn  dōuzuò-de-liào.\[15\]
    including a-CL man all do-PART-able
    *'Even a man can do it.'

Thus, (59c) holds true for lián constituent in the affirmative sentence. In the negative sentence, the situation is more complicated. Examine the following sentences.

(65)  a. 连那个字他都不会。
    lián  nèi-ge  zì  tā  dōu  bù  huì.
    including that-CL character he all not know
    'He doesn't even know that character.'

b. 连中国字他都不会。
    lián  zhōngguó  zì  tā  dōu  bùhuì.
    including Chinese character he all not know
    'He doesn't even know Chinese characters.'

c. 连一个字他都不会。
    lián  yī-ge  zì  tā  dōubùhuì.
    including a-CL character he all not know
    (i)  *'He doesn't even know a character (i.e., a non-specific character).
    (ii)  'He doesn't even know a character. ( = He doesn't know any character at all.)

(65c) is ungrammatical when yī-ge zì 'a character' is taken in its non-specific, non-generic sense as shown in translation (i). It is grammatical only when taken in the sense of (ii), where the lián constituent interacting with negation to produce a universal reading. We will attempt to give an explanation as to why this is so in our later discussion.
To sum up our discussion in this section, the lian constituent is found to possess the following grammatical properties:

(66)  

a. The lian constituent invariably occupies the clause-initial position of the first clause in a lian topic chain.  
b. The lian constituent can optionally be separated from the rest of the clause, in which it overtly occurs by one of following three pause particles: a (ya), ne and me.  
c. The lian constituent is always definite or generic in reference.  
d. The lian constituent can extend its semantic domain to more than one clause.  
e. The lian constituent is in control of the pronominalization or selection of all the coreferential NPs in a lian topic chain.  
f. At least in the case of reflexivization, the lian constituent except in clauses in which it is also subject, plays no role in it.

If we compare (66) with (59), we find that similarities are again too many and too close to miss. There is, however, one great difference. The lian constituent, unlike the primary topic, does not always show up in the clause-initial position of the highest clause. When this happens, it is not the primary topic but it still has many of the topical properties and it occurs in a slot parallel to the ba phrase in a ba sentence, the second nominative in a double nominative construction, the fronted object, and the V + O phrase in the so-called verb reduplication clause. This being the case, the lian phrase when occurring in this position will also be called the secondary topic.

3.3. An Additional Argument

Previously in connection with our comment on Li and Thompson's analysis, we mentioned that the main verb and the verb phrase are the two constituents that cannot be moved freely to the lian slot. Now that we have found that the lian phrase is actually a topic, primary or secondary, we can offer a very good explanation why this is so.

Our explanation, simply stated, is this: any topicalization is blocked if, as a result of the process, what is left behind cannot be its comment. With this in mind, let us take up (5) [repeated here as (67)] again.

(67)a. 他喜欢李四。
    tā xǐhuān Lǐsì.  
    he like Li Si
    'He likes Li Si.'
b. 他连李四都喜欢。
   tā lián Lì Sì dōu xīhuān.
   'He even likes Li Sì.'

   (67c) and (67d) are ungrammatical because when the verb xīhuān 'like' or the verb phrase xīhuān Lì Sì 'like Li Sì' is fronted, what is left behind does not form a comment at all.

   We hope we have by now proved beyond any reasonable doubt that lian constituent is indeed a topic. There, however, remain two important questions for us to answer: (i) It is a well-known fact that topic, representing normally old information, does not usually bear a stress. If it is true, then why should the lian constituent, being a topic as we have argued, always bear a stress? (ii) Why of all adverbs are only dōu 'all' and yě 'also' allowed in this construction? Let us take up the second question first.

4. The Function of dōu and yě in This Construction

   To answer the second question, we have to study the meaning of the lian construction first. Semantically, we have pointed out that lian X dōu/ye in Chinese means the same as 'even X' in English. Following Fraser's (1971) analysis of even in English, we might break down the meaning of the lian . . . dōu/ye construction into three components, one assertion and two presuppositions. Thus in saying (68a or b), the speaker asserts (69a) and pragmatically presupposes (69b and c).  

   (68)  a. 张三连李四也不认识。
       Zhāng Sān lián Lì Sì yě bù rènshì.
       'Zhang San doesn't even know Li Sì.'

       b. 他连李四也三不认识。
       tā lián Lì Sì Zhāng Sān yě bù rènshì.
           'Same as (a).'
(69)  a. Zhang San does not know Li Si.
    b. Zhang San does not know other people.
    c. The speaker would not expect, or would not expect the hearer to expect, Zhang San not to know Li Si.

To put it plainly, (68) means that there is a group of people whom Zhang San doesn’t know and of this group Li Si is the one that the speaker least expects, or would least expect the hearer to expect, Zhang San not to know. This being the case, the speaker will have to have some means to indicate what that group is. So in Chinese the function of lian in the lian X dou/ye construction is to indicate to the hearer that the whole group of which X is a member is the group whose identity is in question.

But why are dou 'all' and ye 'also' chosen for this purpose. To understand how this works, we have to investigate the function of dou and ye first. According to Li and Thompson (1981) and Hou (1983), dou is unique among all adverbs in Chinese in that it can only refer to NPs that precede it to indicate totality as shown in (70a).

(70)  a. 这些孩子，我们都喜欢。
    zhèi-xié háizi, wòmèn dōu xǐhuān.
    these child we all like
    (i) 'We all like all the children.'
    (ii) 'We all like the children.'
    (iii) 'We like all the children.'

However, if one of the eligible NPs is stressed, then the scope of dou is automatically applied to that NP as shown in (70b).

(70)  b. 这些孩子我们都喜欢。
    zhèi-xié háizi wòmèn dōu xǐhuān.
    (with stress)
    these child we all like
    'We like all these children.'

On the other hand, ye, as pointed out by Paris(1977:62) can have its scope both to the right and to the left, as reflected in the two translations in (71).

(71)  他也唱歌。
    tā yě chāng-gē.
    he also sing-song
    (i) 'He, too, sang.'
(ii) 'Besides doing something else, he sang also.'

However, if a constituent in the same clause as ye bears a contrastive stress, then the domain of ye is automatically directed to it. Since in the case of the lian construction, the lian constituent always bears a contrastive stress, the scope of ye, like that of dou, will always be correctly assigned to it. This is a very important reason why dou 'all' and ye 'also' are chosen for this construction. Another important reason has to do with their meanings, i.e. roughly 'all' and 'also' respectively. Notice that previously in our analysis of the meaning of (68), we stated that part of the meaning of (68) is that there is a group of people whom Zhang San doesn’t know. Now one way to indicate this group is to say that there are other people besides Li Si that Zhang San doesn’t know. Another way is to say, more explicitly, that there is a group, all the members of which Zhang San doesn’t know and this group includes Li Si. In the first way, ye is used and in the second, the most natural choice in Chinese is dou, being the most prevalent universal quantifier in the language.

With this explanation in mind, we can now turn to a related question that we raised earlier: Why in a negative lian sentence, an indefinite lian constituent like yi-ge zi 'one character' in (65c) can only have the negative universal interpretation, i.e. NOT (ANY) = NO?

The answer is quite straightforward. Previously, we said that lian X dou/ye construction expresses the idea that we are dealing with a set in which X is, for some reason, the least expected member. So in order to be able to identify the set, we need to first establish the reference of X. Since the X in (65c), i.e. yi-ge zi 'one character' is in one interpretation non-generic, non-specific, it does not meet the requirement. (65c) with this interpretation of yi-ge zi, therefore, does not make any sense. On the other hand, in the interpretation as indicated in (ii), it is permissible, because it has a negated generic reading. The actual operation can be systematically represented as:

\[ \text{NOT (EVEN ONE (y)) = ALL (NOT (y))} \]

5. The lian Topic and Stress

Returning now to the first question, i.e., since topic is normally unstressed, why should the lian topic always bear a stress? To answer this question, we have to first correct a commonly held wrong assumption--topic is always unstressed. Tsao (1979:225-227) points out one of the discourse functions
that topic can serve is to place two or more things in the topic slots for contrast as in (72) and (73). Topics in this function are always stressed.

(72) 弟弟很小气，哥哥却很大方。
dìdi hěn xiǎoqì, gége
younger brother very stingy, older brother
què hěn dàfāng
on the contrary very generous
'While the younger brother is quite stingy, his older brother is very generous.'

(73) 饭不吃了，再用一些。
fàn bù chī le; zài yòng yì xiē
rice not eat PART vegetables & meat more eat some
'Rice (topic), we will have no more; vegetables and meat (topic), have some more.'

The lian constituent, being a topic, can, of course, be explicitly contrasted as in (74).

(74)a. 不但别人的话他听不懂，连我的话他都听不懂。
bùdàn biérén-de huà tā tīng bù dǒng,
not-only other-people's speech he listen not understand
lián wǒ-de huà tā dōутíng bù dǒng.
including my speech he all listen not understand
'Not only can he not understand other people's speech, he cannot understand even my speech.'

b. 他连我的话都听不懂，别人的话更加听不懂。
tā lián wǒ-de huà dōутíng bù dǒng,
he including my speech all listen not understand
biérén-de huà gèngjiā tīng bù dǒng.
other-people's speech even-more listen not understand
'He doesn't even understand my speech; other people's speech will be even more difficult for him to understand.'

More importantly, the lian NP, as we have pointed out, refers to the least expected member of a certain set; it, therefore, always carries a contrast and a surprised overtone. For this reason, the lian NP always bears a stress. The stress should, therefore, not prevent us from considering it as a special topic.
6. Summary and Implications

We have in the previous sections examined the past treatments of the construction including that of Tsao’s (1979). We have found that even though many of them have made significant contributions to our understanding of the construction, none of them have offered a satisfactory generalization as to what can be the lian constituent. A few researchers, including Tsao (1979), were misled, by the fact that the lian constituent always carries a contrastive stress, into analyzing it as a focus construction. In the course of our discussion, we have presented new evidence to show that the lian constituent is always a topic, primary or non-primary and the stress that is associated with it is due to the implicit or explicit contrast associated with the lian constituent.

We have also pointed out that semantically the lian constituent in conjunction with the following dou or ye is to identify the ad hoc class of things in which the entity designated by the lian constituent is the least expected member. Furthermore, we attempted to explain, semantically and syntactically, why ye and dou, of all adverbs, are selected, so to speak, to be in construction with lian.

Our discussion has led us to the discovery of a new perspective on the patterning of the simple sentence in Chinese. We can now look upon a topic as a template and analyze a simple Chinese sentence according to how many topics it has. In this perspective a simple sentence can have roughly the following patterns:

I. Single Topic Construction
   a. S V (75)
   b. S V O (76)
   c. S V O O (77)
   d. S (LV) Nominal Predicate (78)

II. Multiple Topic Construction
   a. S O V (79)
   b. The Ba Construction (80)
   c. The Verb-copying Construction (81)
   d. The Double Nominative Construction (82)
   e. S Adv. V (O) (83)
(75) 小鸟飞了。  
Xiǎo niǎo fēi le.  
little bird fly PART  
'The little bird has flown away.'

(76) 我吃过饭了。  
Wǒ chī-guò fàn le.  
eat-ASP meal PART  
'I have eaten my meal.'

(77)a. 他送(给)我一本书。  
Tā sòng (gěi) wǒ yī-běn shū.  
give to me one-CL book  
'He gave me a book.'

b. 他送一本书给我。  
Tā sòng yī-běn shū gěi wǒ.  
give one-CL book to me  
'He gave a book to me.'

(78) 他是山东人。  
Tā (shì) Shándōng-rén.  
be Shandong-man  
'He is from Shandong.'

(79) 他数学不喜欢。  
Tā shùxué bù xǐhuān.  
mathematics not like  
'As for mathematics, he doesn't like (it).'</n
(80) 他把眼镜掉了。  
Tā bǎ yǎnjìng diào le  
BA eye-glasses lose PART  
'He lost his eye-glasses.'

(81) 他教中文教了二十年。  
Tā jiāo Zhōng wén jiāo-le èrshǐ-nián.  
teach Chinese teach-ASP twenty-year  
'He taught Chinese for twenty years.'

(82) 他学问很好。  
Tā xuéwén hěnhǎo.  
knowledge very great  
'He (topic), (his) learning is profound.'

(83) 他昨天看见你了。  
Tā zuótiān kànjiàn nǐ le.  
yesterday see you PART  
'Yesterday, he saw you.'
Much can be said about these patterns. Space consideration allows us to give only five short comments. First, in a single topic construction, the subject is always at the same time topic. The sentence patterns in this group are therefore in some sense the most unmarked and can be regarded as the canonical sentence patterns. This group is what is closest to the basic sentence patterns in English. These patterns, however, do not enjoy the privilege of occurrence that the corresponding English patterns do. And this is a very important point to bear in mind in comparing English with Chinese.

Second, Adverbs in Pattern II.e., as exemplified by (83) should exclude adverbs of manner such as man-man-de 'slowly' and what has been called by Wang (1983) 'authentic adverbs' such as hai 'still, yet' and you 'again,' as an intensifier in some constructions, most of which are monosyllabic and polysemous.

Third, the secondary topics in II can be further divided into two groups: derived (II a, b, and c) vs. local (II d and e). The distinction between the two lies in the fact that in the surface structure, the status of the secondary topic in the group can be clearly identified while that of the secondary topic in the second group is much less apparent. As a result, sentences in the pattern of II.d. or II.e. are often ambiguous between a single topic and a double topic interpretation. Take (84) for instance.

(84) 他昨天喝了酒了。
Tā zuòtān hē-le jiǔ le.
he yesterday drink-ASP wine PART
(i). 'As for him, yesterday (he) drank some wine.'
(ii) 'He drank some wine yesterday.'

Sentences of this kind can be disambiguated by a larger context or in speaking by the presence of a pause and/or a pause particle.

Fourth, sentences containing more than two topics are not as common but are by no means impossible. They can be generated by embedding one double topic construction inside another (or itself). Examine (85) and (86).

(85) 他儿子大学没考上。
Tā érzìdàxué méikāo-shàng.
he son university not get-admitted
'Speaking of him, (his) son didn't get admitted into any university.'
(86) 他昨天把那本书看完了。
Tā zuótiān bā nà-běn shū kàn-wán le.
he yesterday BA that-CL book read-finish PART
'Speaking of him, yesterday he finished reading the book.'

Fifth and finally, the lian ... dou/ye construction can be used to replace any of the constructions that we have discussed, i.e., syntactically, the lian constituent can replace any topic, be it primary, secondary or tertiary, as exemplified in the following sentences.18

(87) 连小鸟都飞了。
Lián xiǎo niǎo dōu fēi le. (cf. 75)
including little bird all fly PART
'Even the little bird has flown away.'

(88) 他连数学都不喜欢。
tā lián shùxué dōu bù xǐhuān.
(cf. 79)
he including mathematics all not like
'Speaking of him, even mathematics he doesn’t like (it).'

(89) 他儿子连大学都没考上。
tā érzǐ lián dàxué dōuméi kǎo-shàng.
(cf. 85)
he son including university all not get-admitted
'Speaking of him, (his) son didn’t get admitted into any university.'

Notes:

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1. The following abbreviations are used in giving English gloss for Chinese examples:
PART: particle
ASP: aspect marker
CL: classifier
Rel. Mar.: relative clause marker
LOC: localizer

2. As we will argue later on, (1a) and (1b) do not mean exactly the same. In (1a) the lian phrase is a secondary topic while in (1b) it is a primary topic. In other words, the same phrase has more topical prominence in (1b) than in (1a).

3. The main verb in an English sentence can be qualified by 'even' when the verb is stressed, as in (i):

   (i) He even likes Li Si.

4. For a more detailed discussion of the relationship between the lian topic and stress, see Section 5.

5. The primary topic and the secondary topic are, of course, not Tang's terms but mine.

6. It seems to be incorrect to say that 'the reason adverbial' cannot appear as the lian constituent. Witness the following counterexample, which is perfectly grammatical.

   (i) 他连为了朋友都可以不来上课, 何况是为了自己的孩子。
       tà lián wèile pengyǒu dōu kěyǐ bù lái
       he including for friend all can not come
       shàng-kè, hékuàng shì wèile zǐjī-de háízi.
       have-class let-alone be for his-own child
       'Even for his friend, he can cut classes, let alone for his own child.'

7. In Tsao (1987a), ba in the ba construction is regarded as a secondary topic marker. It is not clear, however, whether it should at the same time be regarded as a preposition or not.

8. Wang Li (1956, 1983) refers to this type of adverbials without a preposition as guanxi yu 'relational phrases.'

9. I used to call it 'relational adverb,' but now I think the term should be more properly defined as in Note8. The phrases used in this function should be called 'scope-delimiting phrases' because they delimit the scope of the following comment and for that reason, they can be optionally preceded by quanyu, zhīyu and duīyu all of which can be translated as 'with regard to,' 'concerning' or simply 'about' in English.

10. As indicated by the question mark, (53b) sounds strange. The exact reason, however, is not clear. I suspect that its marginal grammaticality may be due to pragmatic consideration. As I will point out later on lian X dou/ye (y) construction means 'even X (y)' where X is pragmatically the
least expected member of a certain set that (y). Pragmatically, it is quite
difficult to imagine a situation in which \textit{wu-ge pingqiao} 'five apples' is
the least expected member of a set that has the property of \textit{liang-ge lan
le} 'two rotted.' It is, I believe, this difficulty that makes\textsc{(53b)} less
acceptable.

11. For some reason that is yet unclear to me, it is more natural to use \textit{ye\textsc{shi}}
rather than \textit{ye} alone in \textsc{(54b)}.

12. This is a revised list. Three things have been changed. First, what I
previously termed 'sentence' has been replaced by 'clause.' Second, the
term 'discourse' has been replaced by 'interclausal.' Third, verb
serialization was originally included as a process in (f), but my recent
research has found it to be a mistake and as a result, it has been removed.
For a detailed discussion of the serial verb constructions in Chinese, see
Tsao (forthcoming a).

13. Paris also includes the reason adverbial here, but as pointed out in Note 6,
it is probably a mistake.

14. As no linguists have up to date taken up a serious study of the meaning
and use of these pause particles, their meaning and use remain unclear.
We are, therefore, unable to account for why \textit{ba} is less acceptable in this
particular context.

15. 'A man' in the English translation of \textsc{(64c)} is to be taken in its non-
specific, non-generic sense.

16. In Fraser's original analysis, \textsc{(69a)} is also regarded as a presupposition.
Following Heringer's suggestion (personal communication), however, I
feel that assertion is better because the truth value of \textsc{(69a)} changes when
\textsc{(68)} is put in the affirmative as in (i).

(i) Zhang San lian Li Si ye renshi.
Zhang San including Li Si also know
'Zhang San even knows Li Si.'

17. For a more detailed discussion of ditransitive verbs and their interaction
with the goal marker \textit{gei} 'to' in Chinese, see Tsao (forthcoming b).

18. In another paper entitled 'Comparison in Chinese: A Topic-Comment
Approach' (Tsao, ms.), I argue that in Chinese only topics, primary and
non-primary, can be the compared constituents as shown in the
following examples.
TOPIC AND THE LIAN ... DOU / YE CONSTRUCTION

(i) a. 他数学没学好。
  tā shùxué méi xué-hǎo.
  he mathematics not learn-good
  'As for him, (he) didn't learn mathematics well.'

b. 他连数学都没学好。
  tā lián shùxué dōu méi xué-hǎo.
  he including mathematics all not learn-good
  'Speaking of him, even mathematics (he) didn't learn (it) well.'

c. 他英文比数学学得好。
  tā Yingwén bǐ shùxué xué-de-hǎo.
  he English BI mathematics learn-good
  'Speaking of him, (he) learned English better than he did mathematics.'

Thus, in a way the comparative construction behaves like the lian ... dou/ye construction.

References


