

## Temporal Sequence in Chinese: A Rejoinder\*

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### 1. INTRODUCTION

Starting with Tai (1985), I have published a series of works (Tai 1989, 1993a, 1993b, 1994, 1997, 1999a, 1999b), demonstrating that iconic motivations are pervasive in Chinese grammar.<sup>1</sup> For linguists who have adopted the functionalist orientation, the pervasiveness of iconic motivations in language structure presents a serious challenge to the fundamental philosophical foundations of generative grammar, namely the autonomy thesis of syntax. However, in North America, Newmeyer (1992, 1998) argues that iconicity poses only a perceived challenge, rather than a real challenge, to generative grammar. With respect to the temporal sequence principle in Chinese grammar, he proposes to treat it as a grammaticalized pragmatic principle and thereby dismisses it as an external constrain on syntax as proposed in Tai (1985). In addition, in Europe, Paris and Peyraube (1993) question the validity and explanatory value of temporal sequence in Chinese grammar. In this paper, I will reexamine temporal order in Chinese as an iconic motivation and argue that this motivation has been deeply entrenched in Chinese grammar and cannot be treated as a grammaticalized discourse-based pragmatic principle. The paper is organized as follows. Section 2 responds to Newmeyer's treatment of temporal sequence in Chinese, which deals with more general issues pertaining to iconicity and generative grammar. Section 3 discusses some of Paris and Peyraube's counterexamples and related issues raised in their article. Section 4 attempts to view language structure as a result of interaction between structurally based and conceptually

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<sup>1</sup> S.F. Huang (1981) observes the isomorphism between word order and scope interpretation in Chinese quantifiers. Isomorphism is another fundamental aspect of iconicity besides iconic motivations that have drawn much of my attention. See Haiman (1980) for detailed discussions on isomorphism and motivation.

based principles through historical development by way of child language acquisition. Section 5 concludes this paper with some remarks on the value of research on iconicity and the special status of Chinese in this line of research.

## 2. IN RESPONSE TO NEWMAYER

Newmeyer (1992,1998) examines functionalist works on iconic motivations and their relation to generative grammar. Newmeyer identifies three distinct claims in iconic research. They are:

- (1) a. Grammatical structure is an iconic reflection of conceptual structure.
- b. Iconic principles govern speakers' choices of structurally available options in discourse.
- c. Structural options that reflect discourse-iconic principles become grammaticalized.

Newmeyer then argues that (1a) has already been built into generative grammar, (1b) is irrelevant to generative grammar, and (1c) poses no real challenge to the autonomous thesis of generative grammar. Obviously, among these three claims, (1c) poses the greatest perceived challenge to generative grammar. This is because grammaticalized discourse principles represent the existence of grammar-external principles operating on the grammar. It is in this context that Newmeyer attempts to show that temporal sequence in Chinese is simply a grammaticalized discourse principle, and not an independent grammatical principle, as I had argued in Tai (1985).

In order to show that temporal sequence in Chinese grammar is a grammaticalized discourse principle, Newmeyer first argues that temporal sequence is a general discourse principle, and then argues that the principle is only grammaticalized in Chinese. To do so, he begins by pointing out the well-known conversational implicature in temporally-ordered conjoined sentences in English, as illustrated in (2).

- (2) a. Mary bought some motor oil and went to the supermarket.
- b. Mary went to the supermarket and bought some motor oil.

That the meaning difference in the two sentences in (2) can be accounted for by conversational implicature is evidenced by the fact the temporal order in these sentences can be cancelled, for

example, by adding "but not in that order", as shown in (2').

- (2') a. Mary bought some motor oil and went to the supermarket --but not in that order.  
 b. Mary went to the supermarket and bought some motor oil--but not in that order.

In other words, (2a) conversationally implicates, but does not entail, that Mary bought some motor oil prior to going to the supermarket.

Similarly, (2b) does not entail that Mary went to the supermarket before buying some motor oil. Conversational implicatures in (2) can be accounted for by one of Grice's maxims governing successful conversations, namely, "Be orderly".

Newmeyer then argues that the Gricean maxim has been grammaticalized in Chinese so that the interpretation of (3a) and (3b) in real time must follow the grammatical ordering of the serial verb constructions in these sentences. In other words, an interpretation of (3a), in which Zhangsan had a book before going to the library, is impossible. By the same token, (3b) cannot be interpreted with Zhangsan going to the library before the action of taking out a book.

- (3) a. Zhangsan [dao tushuguan] [na shu].  
 Zhangsan reach library take book  
 'John went to the library to get the book.'  
 b. Zhangsan [na shu] [dao tushuguan].  
 Zhangsan take book reach library  
 'John took the book to the library.'

Chinese does not have the exact equivalent of the English phrase, "but not in that order", as given in (2'). Nonetheless, a canceling test can still be designed, as in (3').

- (3') a. \*Zhangsan [dao tushuguan] [na shu], keshi ta xian na shu.  
 'John went to the library to get the book, but he took the book first.'  
 b. \*Zhangsan [na shu][dao tushuguan], keshi ta xian dao tushuguan.  
 'John took the book to the library, but he went to the library first.'

Newmeyer takes the position that (3a) and (3b) should be treated as the grammaticalization of a Gricean implicature, rather than be constrained by an independent grammatical principle of temporal sequence, as proposed in Tai 1985. He argues that Chinese has not in general

grammaticalized the maxim, "Be orderly". He claims that Chinese sentences conjoined with *bingqie* 'and' are interpreted in the same way as English sentences conjoined with "and"; that is, temporal ordering is conversational implicature but not logical entailment. To illustrate, Newmeyer (1992:776) provides the following examples:

- (4) a. Zhangsan mai-le yixie jiyou bingqie qu-le shangdian.  
Zhangsan buy-ASP some motor.oil and go-ASP store  
'John bought some motor oil and went to the store.'
- b. Zhangsan mai-le yixie jiyou bingqie qu-le shangdian,  
Zhangsan buy-ASP some motor.oil and go-ASP store,  
keshi ta xian qu shangdian.  
but he first go store  
'John bought some motor oil and went to the store,  
but he went to the store first.'

Crucially, Newmeyer equates *bingqie* with the simple conjunction "and" in English. *Bingqie*, however, is not a simple conjunction, but is, in fact, more similar to English 'besides, moreover', and is regularly used atemporally. The closer equivalent in Chinese of English simple "and" is zero marking, with a potential pause, so that the sentences in (2), for example, are rendered in Chinese as:

- (5) a. ?Mali mai-le yixie jiyou, qu-le shangdian.  
Mali buy-ASP some motor.oil, go-ASP store  
'Mary bought some motor oil and went to the supermarket.'
- b. Mali qu-le shangdian, mai-le yixie jiyou.  
Mali go-ASP store, buy-ASP some motor.oil  
'Mary went to the supermarket and bought some motor oil.'

The two Chinese sentences in (5) are not equally grammatical. (5b) is better than (5a) because the temporal order in (5b) reflects a natural ordering of going to the store and buying something. In contrast, in (5a), one has to impose a temporal ordering to make the sentence grammatical, by imagining a situation wherein one would want to juxtapose, in a single sentence, the two activities, buying motor oil before going to the supermarket. A possible scenario would be going to the gas station to buy motor oil and then driving to the supermarket. A more grammatical rendition of (5a) would be the inclusion of the conjunction, *ranhou* 'then', as in (5'a). In contrast, (5b) becomes less

acceptable if *ranhou* is inserted, as in (5'b).

- (5) a. Mali mai-le yixie jiyou, ranhou qu-le shangdian.  
 Mali buy-ASP some motor.oil, then go-ASP store  
 'Mary bought some motor oil, and then went to the supermarket.'  
 b. ?Mali qu-le shangdian, ranhou mai-le yixie jiyou.  
 Mali go-ASP store, then buy-ASP some motor.oil  
 'Mary went to the supermarket, and then bought some motor oil.'

The oddity in example (5'b) can be accounted for by the assumption that the conjunct *ranhou* is redundantly used for two clauses which represent two temporally ordered events in our conceptual world. As a matter of fact, the temporal entailment cannot easily be cancelled in Chinese conjoined sentences with 'zero conjunct'. This can be demonstrated by the unacceptability of (6).

- (6) \*Mali qu-le shangdian, mai-le yixie jiyou,  
 Mali go-ASP store, buy-ASP some motor.oil,  
 keshi ta xian mai-le yixie jiyou.  
 but she first buy-ASP some motor.oil  
 'Mary went to the supermarket (and) bought some motor oil,  
 but she first bought the motor oil.'

(5a), (5b) and (6) show that the interpretation of temporal order in conjoined sentences in Chinese with no overt conjunctions is stronger than English conjoined sentences containing "and".

In addition to (4), which I have just shown to be an invalid argument, Newmeyer (1992:777) also cites the following example to show that temporal sequence is at best a grammaticalized discourse principle in Chinese:

- (7) Wo chu men qian, yiding guan hao men chuang.  
 I out door before must shut well door window  
 'I must close the door and window before I go out.'

Note, however, that the first clause is marked with an overt adverbial adjunct, *qian* (a reduced form of *yiqian*) 'before', and serves as a subordinate clause. In Chinese, the natural order is for a subordinate clause to precede the main clause. This follows from the independent structural principle in Chinese of modifier preceding the head. (7) is a case where a fundamental structural principle overrides the temporal sequence principle. In other words, a case where the "command"

relation overrides the "precedence" relation in word order. There is a good reason for the overriding of temporal sequence. First of all, we are not dealing with simple conjoined sentences, but complex sentences containing both a subordinate clause and a main clause. Secondly, in terms of information flow, the subordinate clause represents the background information, setting the stage for the main information, presented in the main clause. Hence, the ordering of the two clauses in (7), in fact, conforms not only to structural principles, but also to functional principles in Chinese and other languages, namely, background-before-foreground information.

This background-before-foreground order can be further understood in terms of the figure/ground analysis which cognitive linguistics has adopted from earlier Gestalt Psychology (Ungerer & Schmid 1996, Talmy 2000). 'Figure' refers to the foreground part in one's perception in space, and the focus of attention in time span. In contrast, 'ground' refers to the background part in both spatial and temporal domains. In human cognition, the figure/ground relation is closely related to the part/whole relation; 'figure' is understood as part, and 'ground' as whole. Thus, the background-before-foreground order is consistent with and can be further subsumed under the whole-before-part word order principle in Chinese. In contrast, as shown in the English translation of sentence (7), English adopts the foreground-before-ground order just as it adopts the part-before-whole word order principle.

There are cases in Chinese where the temporal sequence principle overrides the head-final structural principle. Examples include resultative verb compounds (as in (8)) and post-verbal *zai* phrases (as in (11b)), where the head precedes the non-head because of the operation of the temporal sequence principle. Interestingly, both resultative verb compounds and post-verbal *zai* phrases can also be understood in terms of background-before-foreground information. In this way, temporal sequence principle here works hand in hand with ground-before-figure principle. In short, while (7) does not show the temporal sequence principle in operation, it does not invalidate it either. Nor does it show that the temporal sequence principle is only a

grammaticalized discourse principle.

Newmeyer argues against treating temporal sequence as an independent grammatical principle because it falsifies the autonomy thesis, the foundation of generative grammar. He proposes, instead, that in the Chinese case, it is at best a result of the grammaticalization of the Gricean maxim, "Be orderly". That maxim is iconic but a discourse principle nevertheless. He does recognize, however, that there remains the problem of explaining why this discourse principle is grammaticalized in Chinese, admitting that "in truth generative grammar has little to offer in the way of an explanation of phenomena such as these" (p.777). Such admission reveals the challenge of the temporal sequence principle to the fundamental autonomy thesis of generative grammar.

I have treated temporal sequence as a grammatical principle in Chinese rather than the grammaticalization of the Gricean maxim, "Be orderly". The reason is that the principle is deeply entrenched in various aspects of Chinese grammar. This principle not only governs serial VP constructions, but also the well-known resultative verb compounds. In the latter, action always precedes the resultant state, as in (8):

- (8) a. da-po  
hit-break 'to break (by hitting)'  
b. chi-bao  
eat-full 'to be full (from eating)'

The ordering of the two constituents of a resultative verb compound can be accounted for by such formal grammatical principles as Baker's (1989) notion of "object sharing" in serial verb constructions. However, Schiller (1991), on the basis of an extensive cross-linguistic study of serial verb constructions, argues that the temporal sequence principle provides a genuine explanation for the ordering of the constituents in serial verb constructions. Insofar as temporal sequence principle is independently motivated for word order in natural languages, it provides us with a simple but elegant external explanation. Unfortunately, generativists have decided to dismiss

external explanation by looking for excessively ad hoc grammar-internal explanations. Baker's adoption of 'object sharing' for temporal sequence is a good case in point.

It is true that formal grammatical principles can account for other kinds of word order in Chinese. For example, the word order difference between (9) and (10), involving *zai* phrases, can be derived from the distinction between specifier and complement in X-bar syntax. In Chinese, the specifier is ordered before the head while the complement is ordered after the head. Thus, in (9), the *zai* phrase is a specifier ordered before the head (the verb phrase *kan shu* 'read book'), while in (10), the *zai* phrase is a complement ordered after the head (the verb *diao* 'fall'). Furthermore, the selection of specifier versus complement with respect to the main verb can be attributed to the semantic difference between the two verbs, *diao* and *kan*.

- (9) a. Ta zai tushuguan kan shu.  
       he at library read book  
       'He is reading in the library.'  
       b. \*Ta kan shu zai tushuguan.  
 (10) a. Shu diao zai di-shang.  
       book fall at ground-on  
       'The book fell onto the ground.'  
       b. \*Shu zai di-shang diao.

However, there are many cases in which the same verb can take either a specifier or a complement, with the choice of one or the other signaling differences in meaning, as illustrated in (11).

- (11) a. Xiao-haizi zai zhuozi-shang tiao.  
       child at table-on jump  
       'The child was jumping on (top of) the table.'  
       b. Xiao-haizi tiao zai zhuozi-shang.  
       child jump at table-on  
       'The child jumped onto the table.'

In cases such as these, a formal account would force one to propose that there are two verbs, *tiao*<sub>1</sub> and *tiao*<sub>2</sub>, with one taking a specifier and the other taking a complement. However, as there are numerous such cases in Chinese, a formal account would lose the generalization. In contrast,



temporal sequence simply says that post-verbal *zai* phrases are the result of the action denoted by the verb. Preverbal *zai* phrases, on the other hand, provide the setting indicating the location of the action denoted by the verb. Being the setting, it provides background information, and is hence ordered before the action takes place.

To sum up, I have argued that the temporal sequence principle is an independent grammatical principle that provides valid, grammar-external principle of explanatory value for a large number of word order phenomena in Chinese and many other languages. I have further suggested that the temporal sequence principle interacts closely with the head-final principle in Chinese. I believe that the great majority of word order phenomena in Chinese can be accounted for in terms of these two principles and their interaction. The important question for future research is the domain of application of these two principles, and the nature and areas of their interaction. On this view, the interactionist approach advocated by Hsieh (1989, 1992) proves to be a promising approach for Chinese grammar. Indeed, Chinese grammar provides linguists with an important laboratory for exploring the interaction between grammar-external and grammar-internal principles.

My response to Newmeyer has thus far been limited to (1c), particularly with respect to the grammaticalization of temporal sequence in Chinese. To complete my response to Newmeyer, I would like to address (1a) and (1b) briefly. Let me start with (1b). Newmeyer argues, as many generativists do, that iconic discourse principles are irrelevant to the study of real grammar. But, for functionalists, generative grammar is also irrelevant to a lot of interesting discourse principles that operate in the real language.

As for (1a), Newmeyer argues that various kinds of structure-concept iconicity have already been built into standard versions of generative grammar. Since generative grammar is largely a theory of syntactic structures, it needs a theory of conceptual structures for incorporating structure-concept iconicity. For the latter, Newmeyer appeals to the core of Jackendoff's (1983, 1990) semantic theory, his hypothesis of conceptual structure. Newmeyer then argues that generative grammar, in

conjunction with Jackendoff's semantic theory, is able to account for the fact that grammatical structure is an iconic reflection of conceptual structure. Newmeyer's argument hinges on the assumption that Jackendoff's conceptual semantics accounts for the syntax-semantics match-up in natural languages.

However, as my study of spatial expressions in Chinese and English (Tai 1993b) has revealed, Jackendoff's conceptual structures are biased toward English grammar and cannot be construed as a universal conceptual structure. Without a universal conceptual structure, it is intrinsically impossible for generative grammar to account for structure-concept iconicity. Using GB as the representative model, we can at most propose that further elaboration is needed at three levels: at D-structure to take care of the notion of compositionality, S-structure to take care of various functional motivations, and LF to take care of transparencies involving scope interpretation. Hence, Newmeyer's claim that (1a) has already been dealt with in generative grammar cannot be sustained.

### 3. IN RESPONSE TO PARIS AND PEYRAUBE

Paris and Peyraube (1993) question the validity of principle of temporal sequence (PTS) by pointing out what they see as counter-examples in Chinese grammar.<sup>2</sup> One such pair of examples is given in (12) and (13).<sup>3</sup>

- (12) a. Wo chifan yihou, ni da dianhua gei wo.  
 I eat after you make telephone to me  
 'After I have eaten the meal, you call me.'
- b. \*Ni da dianhua gei wo, wo chifan yihou.
- (13) a. Wo chifan yiqian, ni da dianhua gei wo  
 I eat before you make telephone to me  
 'Before I have eaten the meal, you call me.'
- b. \*Ni da dianhua gei wo, wo chifan yiqian.

<sup>2</sup> Paris and Peyraube have given their examples with glosses and translation in French. For the convenience of general readers, I have repeated their examples, but with English glosses and translations.

<sup>3</sup> (12b) and (13b) are in fact acceptable in spoken Chinese. The adverbial clauses are placed after the main clauses in order to focus on the main clause. See Tai (1985) for discussion on situations where due to focus purposes, salient word order can override both structurally based word order and conceptually based temporal order.

The word order in (12a) reflects real time sequence, with eating preceding telephoning. The word order in (13a), however, does not reflect real time sequencing. Paris and Peyraube then argue that the sentence violates the PTS, thus serving as a counterexample. Observe that (12a) parallels sentence (7), the example given by Newmeyer. My response to Newmeyer's counterexample also holds here. That is, *yiqian* 'before' and *yihou* 'after' are adverbial adjuncts marking subordinate clauses. *Yiqian* and *yihou* adverbial clauses are explicitly marked as subordinate clauses, and are subjected to the head-final word order constraint in Chinese. Therefore, word order with respect to the two clauses within (12a) and (13a) obeys the head-final structural principle rather than the PTS. But, as in (7), (12a) and (13a) should both be treated as also obeying the functional principle of background-before-foreground information, as well as ground-before-figure and whole-before-part cognitive principles in Chinese.

Another pair of examples in Paris and Peyraube involves the word order of *zai* phrases. They argue that there are cases of *zai* phrases that can occur pre-verbally or post-verbally without meaning change, as in the pair of sentences in (14):

- (14) a. Ta zhu zai Beijing.  
           he live at Beijing  
           'He lives in Beijing.'  
       b. Ta zai Beijing zhu.  
           'Idem'

The pair of examples in (14) presents a challenge to structural explanations but not to the PTS. First, observe that *zhu* 'to live, to dwell' is not a genuine intransitive verb. It requires a location as its complement, as evidenced by the ungrammaticality of (15).

- (15) \*Ta zhu.

Within the framework of formal syntax, (14a) can be accounted for readily by treating the prepositional phrase, *zai Beijing*, as an argument governed by the verb, *zhu*. The phrase is then ordered after the verb, just as objects are ordered post-verbally. The corresponding sentence (14b)

then poses a problem. From the point of view of temporal sequence, the *zai* phrase is freely ordered because the placement before or after the verb does not result in any meaning difference with respect to temporal sequence. In other words, unlike other serial verb constructions, the *zai* phrase and the verb do not involve temporal order, and their relative order is not constrained by the PTS. This differs from the case in (11a) and (11b) above, where temporal order is involved and the relative order between the *zai* phrase and the verb is constrained by the PTS. On this view, the PTS provides a better explanation than a formal syntactic one.

Another type of examples given in Paris and Peyraube is the pair in (16).

- (16) a. Wo mai shu qu.  
 I buy book go  
 'I am going to buy books.'  
 b. Wo qu mai shu.  
 'Idem'

They argue that in northern Mandarin, (16a), which does not comply with PTS, is as acceptable as (16b). There is evidence that (16a) and (16b) are not totally synonymous. First, (16b) is clearly a purposive sentence, and therefore prime candidate for temporal sequence. (16a), on the other hand, is not necessarily a purposive clause. Observe that *qu*, pronounced in the neutral tone in (16a), is a directional complement; it indicates direction of movement with respect to the hearer. *Qu* does not form a temporal relationship with the verb, *mai* 'buy' in (16a), as in the case of (16b). This is further shown by the existence of (17), where *qu* occurs both before and after the verb, *mai*:

- (17) Wo qu mai shu qu.  
 I go buy book go  
 'I am going to buy books.'

Paris and Peyraube also cite an example from literary Chinese, given here in (18):

- (18) Xin ji zi Shanghai.  
 letter send from Shanghai  
 'The letter was mailed from Shanghai.'

*Zi* with the meaning of 'from' in (18) is from Classical Chinese. Sentences with *zi* phrases reflect the word order of Classical Chinese with respect to the placement of these phrases vis-a-vis

the verb. Thus, if we replace *zi* with modern Chinese *cong* 'from', (18) would be ungrammatical:

(18') \*Xin ji cong Shanghai.

It is important to note here that one of the strongest evidence for temporal sequence as a grammatical principle in Chinese is the invariant order that exists between *cong* phrases and *dao* phrases in modern Chinese; that is, *cong* phrases always precede *dao* phrases in a sentence. This is illustrated in (19a) and (20a).

- (19) a. Ta cong Beijing zuo huoche dao Shanghai.  
 he from Beijing sit train to Shanghai  
 'He took a train from Beijing to Shanghai.'  
 b. \*Ta dao Shanghai zuo huoche cong Beijing.  
 c. \*Ta zuo huoche dao Shanghai cong Beijing.
- (20) a. Ta cong zaoshang dao wanshang dou zai kan shu.  
 he from morning to evening all ASP read book  
 'He read the whole time from morning to evening.'  
 b. \*Ta dao wanshang cong zaoshang dou zai kan shu.

To the best of my knowledge, the ordering of *cong* and *dao* phrases in Chinese cannot be explained by any existing structural principles. The ordering also argues against Newmeyer's claim that temporal sequence in Chinese is a grammaticalized discourse principle, and not a cognition-based syntactic principle constraining the word order.

Besides the literary Chinese example involving *zi* 'from' in (18) above, Paris and Peyraube also cite an example from Classical Chinese involving *yu* 'than' to show the invalidity of the PTS:

- (21) Ji shi fu yu Zhou gong  
 Ji family rich than Zhou duke  
 'The Ji family is richer than the Duke of Zhou.' (Lunyu)

It is true that Classical Chinese generally does not follow the word order of temporal sequence. The reason, I believe, is due to Classical Chinese employing prepositional phrases (as in modern English), rather than serial verb constructions (as in modern Chinese). It is the serial verb constructions that are sensitive to temporal sequence constraints. Suppose we render (21) into

modern (Mandarin) Chinese. This would yield (22a), which contains the coverb *bi* 'to compare'. The PTS applies here, since one has to conduct a comparison before knowing who is richer, the Ji family or the Duke of Zhou, hence the ungrammaticality of (22b).

- (22) a. Ji shi bi Zhou gong fuyou.  
 Ji family compare Zhou duke rich  
 'The Ji family is richer than the Duke of Zhou.'  
 b. \*Ji shi fuyou bi Zhou gong.

Paris and Peyraube also cite a Cantonese example involving comparatives to show that the PTS is violated there as well:

- (23) keuih gou guo ngoh.  
 he tall pass I  
 'He is taller than I.'

Although they glossed *guo* as 'par rapport à' instead of 'passer', thus treating *guo* as a preposition and not a verb. The comparative construction in Cantonese actually involves a serial verb construction consisting of *gou* 'to be tall' and *guo* 'to exceed'. (23) can be construed more like a resultative verb compound construction, with *guo* as the resultative component, and obey the PTS.

Both modern Cantonese and Mandarin Chinese use the serial verb construction for comparative sentences, although the former uses a resultative construction while the latter uses a serial verb construction involving a coverb. *Guo* in Cantonese has the transparent meaning of 'to pass, to exceed', and *bi* in Mandarin that of 'to compare'. Both obey the PTS in their respective subcategory of serial verb construction.

In contrast, the Classical Chinese comparative construction uses *yu*, a preposition that is empty of meaning, though it has been glossed variously as 'than', 'at', 'with regard to', and so forth, depending on context. Therefore, typologically speaking, Classical Chinese is more like English, which is more structurally based. Modern Chinese dialects, in contrast, are more semantically based.

Paris and Peyraube treat the comparative constructions in Classical Chinese, modern Mandarin Chinese, and modern Cantonese on a par, as though they involve the same syntactic construction. This is reflected in their use of the same gloss, 'par rapport à' ("with regard to" in English), for Classical Chinese *yu*, modern Mandarin *bi*, and modern Cantonese *guo*.

Paris and Peyraube give other examples that they claim to be counterexamples to the PTS. Because of space limitation, I am not able to respond to them case by case. However, it suffices to say that my responses given above can be extended to address those cases that have not been discussed explicitly here.

#### 4. BETWEEN ICONICITY AND SYMBOLISM

Newmeyer has treated the temporal order in Chinese as the grammaticalization of discourse-based Gricean maxim 'be orderly'. At the same time, he noted that "But we are still faced with the question how to explain why this grammaticalization (as limited as it appears to be) took place in the history of Chinese." (Newmeyer 1992:777). In discussing comparative constructions, Paris and Peyraube in fact also raise a question similar to Newmeyer's. The question is as important as intriguing, namely, why the Classical Chinese evolved from symbolism towards iconicity.<sup>4</sup> This is contrary to the belief that languages generally evolve from iconic to symbolic, as displayed in the development of Chinese writing system. It is true that Classical Chinese is more symbolic than modern Chinese in many respects. Besides the lack of coverbs and serial verb constructions, Classical Chinese also exhibits much more denominal verbs than modern Chinese (Tai 1997). In general, it can be maintained that Classical Chinese is more structurally based, while modern Chinese is more conceptually based.

Why the Chinese language appears to be evolving from symbolism towards iconicity cannot be

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<sup>4</sup> I have followed the working hypothesis in Chinese historical linguistics that Classical Chinese somehow reflects the structure of spoken Chinese in that or earlier period of time. However, the possibility should not be ruled out that Classical Chinese had developed from a telegraphic style of historical records dating from the oracle bone scripts in the Shang dynasty. For instance, the locative *zai* in Modern Chinese appeared frequently in Early Archaic Chinese before Classical Chinese, where the particle *yu* was almost exclusively used. See Dobson (1962) for details.

answered definitively at this time, without better knowledge of the developmental stages of the language before Classical Chinese. Nevertheless, I would like to offer some speculations by taking a hint from Newmeyer (1992:777) that the answer may lie in child language acquisition. Recall, first of all, the observation made above that modern Chinese is more semantically based than Classical Chinese. There is clear evidence from child language acquisition studies (e.g., Slobin 1985, *inter alia*) that children modify the adult language in line with natural, conceptual, and semantic principles that they understand. They only learn the arbitrary, structural principles later on. Children's language thus tends to be more conceptually based and semantically-based than the adult language, and hence more iconic. These studies, unfortunately, focus on inflectional languages with rich morphology, and do not include Chinese.

Nonetheless, some generalizations can perhaps be drawn from these language acquisition studies. Presumably, similar to the children in those studies, the children of Classical Chinese also produced language that was more conceptually and semantically based than their parents. If so, the logical question then is why the language of Chinese children during the Classical Chinese period did not develop into a more arbitrary and symbolic language, thereby matching the adult one. There is one possible answer. Note firstly that, although structurally based, Classical Chinese has only relatively limited inflectional morphology. There was, thus, perhaps less compelling need for the children to develop general strategies to deal with abstract structural principles.

Furthermore, in terms of language evolution, there is always a dynamism between symbolism and iconicity (Haiman 1977, Tai 1993a). On the one hand, as pointed out in the well-known Vygotskian theory of language development, human language needs to become more abstract to progress to more advanced stages in civilization. On the other hand, in the face of increasing abstraction and arbitrariness, it is also human nature to counter this tendency. This can be accomplished by reintroducing natural rules of representations, or by reinterpreting arbitrary symbols with new and non-arbitrary associations.



There is ample evidence of reinterpretations in language change in Chinese. Examples include 'folk etymology', in the reinterpretation of Chinese expressions, and many new Chinese characters created by common people in different dialectal regions (Hsueh 1987). These cases involve the active role of reinterpretation to bring about more natural associations between meaning and form. And, as the philosopher, Foucault, reminds us, the constant search for similarities in the universe is a fundamental part of the human drive to make sense of the world around us. There is no reason to think that this part of the human mind would not affect language development and language change.

## 5. CONCLUSION

In conclusion, temporal order in Chinese presents a genuine challenge to the autonomy thesis of generative grammar. Apparent counterexamples to the temporal sequence principle are due to its interaction with structurally based principles and other conceptually based principles. The complexity of language structure with mismatches between form and function can better be understood as equilibrium between iconicity and symbolism. Chinese, with its long history and various dialects, provides researchers with a uniquely fertile ground for exploring dynamism between arbitrary conventions and natural motivations in human behaviors.

Paris and Peyraube are perceptive in recognizing that recent research on iconicity is a return to naturalism as a reaction to excessive formalism. However, I do not agree with their opinion that iconicity researchers are creating a new dogma, ignoring the truisms about the nature of linguistic symbols espoused by past scholars as well as their contemporaries.

From time immemorial, thinkers have been engrossed with the issue of whether the relationship between form and meaning (or between 'signifier' and 'signified') is a natural one or an arbitrary one. The ancient Greeks' controversy between analogy ('regularity') and anomaly ('irregularity') is an extension of an earlier debate over whether the association between words and their meanings is natural or conventional (cf. Antilla 1989). As a matter of fact, in third century A.D., the Chinese

philologist, Liu Xi, raised a similar question in the *Shi Ming*, and opted for total naturalism. In the West, the issue of the relationship between form and meaning was brought up again by Saussure. Although Saussure's central theory is based on the arbitrariness principle, he was also the one who proposed the notion of relative motivations, a notion intended to qualify his central theory of arbitrariness. In more recent times, the search for iconic motivations was initiated by Jakobson, Bolinger, and Greenberg, in their effort to identify some language universals.

In the past two decades, the debate between functionalism and generative grammar in North America is a continuation of the centuries-old inquiry into the relationship between form and meaning. Functionalists consider iconicity to be at the core of functionalism. This is because iconicity provides general, grammar-external principles that can account for a wide array of syntactic facts without stipulating abstract and arbitrary constraints. Functionalists consider such constraints to be theory-internal, which are not easily confirmed by empirical evidence in other domains of human cognition.<sup>5</sup>

It is important to point out that very few researchers of iconicity deny the existence of arbitrary grammatical principles. What they have attempted to show is that not all of the grammatical principles are arbitrary and autonomous. In my recent series of works, I have shown that Chinese grammar is more conceptually based and iconically motivated than English. I firmly believe that Chinese grammar provides fertile ground for studying iconicity in human language. This research has far-reaching implications not only for linguistics but also for an understanding of the nature of the human mind.

Furthermore, the study of iconicity is part of the more general study of semiotics. We know that the Chinese writing system began with both imagic iconicity and diagrammatic iconicity.

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<sup>5</sup> In practicing linguistics as a science, a central question is what constitutes meaningful explanations. For functionalists, grammar-external principles provide more meaningful explanations than the formal, grammar-internal ones. They also believe that explanations using extra-grammatical principles are superior to explanations based on theory-internal primitives and axioms. I, for one, am of the opinion that modern, formal syntactic theories have attempted to emulate logical-mathematical science rather than more mature social sciences like psychology. And I question whether that is the right direction for linguistics to take, and have chosen, instead, to opt for an approach that

*Xiang-xing* characters are based on the principle of imagic iconicity, and the *zhi-shi* and *hui-yi* characters on the latter principle. Although these three groups of characters constitute only a small percentage of the entire set of Chinese characters, they are, nonetheless, the foundation of the creation of the Chinese writing system. As iconicity plays an important role in both the formation of Chinese characters and the grammatical structure in Chinese, it is tempting to link these two areas of communication, the written and the spoken form of communication. Through this linking, one can then explore to what extent iconicity may be observed in other forms of communication, forms such as literature, drama, and social institutions. In this way, we will be able to connect linguistic studies with those in the humanities.

Finally, it is worth repeating the quote in Newmeyer's abstract prefacing his 1992 article (Laudan 1977:103):

"There are times when two or more research traditions, far from mutually undermining one another, can be amalgamated, producing a synthesis which is progressive with respect to both the former research traditions."

Despite quoting Laudan, Newmeyer concludes his article and his recent book with a defense of the autonomy thesis rather than suggest a direction for developing a synthesis between the generative approach and the functionalist one centering on iconicity. In response to Laudan's calling for a synthesis, I would like to draw attention to the interactionist approach proposed by Hsieh (1989, 1992), that indeed follows Laudan's spirit in exploring a synthesis between functionalism and formalism. It is in this spirit that I have attempted to illustrate the interaction between structurally based principles and conceptually based principles. The Chinese language with its various dialects and long history provides us with a fertile ground for exploration in this direction.<sup>6</sup>

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is both more cognition-based and semiotics-based.

<sup>6</sup> Chang (1991) is a good example of research along this line.

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