

Is Chinese a Pragmatic Order Language?*

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Abstract

Chinese is shown to be a discourse accusative language in which there is a strong discourse pressure uniting A and preverbal S in that they both introduce given information into discourse. The pairing together of A and S motivates a nominative category, namely a category that marks topical information, while new information is introduced into the discourse in the O or postverbal S role. Moreover, data on anaphoric links across successive clauses show that S/A links far outnumber S=O links. Thus the topic continuity dimension also defines for Chinese a nominative/accusative {S, A} alignment.

A/S in Chinese is shown to have acquired some 'subject' properties, though perhaps not all of the subject properties characteristic of subject-prominent languages (e.g. subject-verb agreement or subject-creating constructions), and since initial position has not yet become divorced from its pragmatic origin (there being no dummy subject creating constructions), it might be more advisably termed a category of 'grammaticalized topic' in the sense of Comre (1988) distinct from topic and from subject.

Word order in Chinese is shown to be more sensitive to valency role than to discourse pragmatics, though both factors are highly predictive of word order. The present study suggests that Chinese is aligned with other type C language *a la* Faarlund (e.g. Norwegian and English) where the only device available for expressing semantic (e.g. that of the agent) and pragmatic functions (e.g. that of topic) is linear order. However, Chinese differs from these other type C languages in that when there is a

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conflict between semantic and pragmatic functions, type C languages typically resolve the conflict by availing themselves of a syntactic role changing process (e.g. passive), while Chinese typically relies on a complex interplay between semantics and pragmatics for its resolution.

“knowledge of a thing engenders love of it; the more exact the knowledge, the more fervent the love.”

Leonardo Da Vinci

1. Introduction

It is now widely agreed that discourse pragmatics provide much of the substance of grammar. A primary assumption that energizes functional linguistics is that grammar is discourse driven and that grammar is motivated in large part by functional considerations. Grammar is seen on this conception to be secondary and emergent from discourse. A natural consequence of this idea is that the central project of syntax is the study not of grammar, but of grammaticization — the ways in which a form or a combination of forms available for the construction of discourse comes to be regarded by the speech community as the usual or unremarkable way of making a discourse point and is recognized as becoming to a greater or lesser degree ‘grammatical’ (Hopper and Thomsson 1991).

In this paper we seek to shed light on the pragmatics of word order in Chinese. We will show that Chinese is a discourse accusative language where there is a strong pressure uniting S and A in that they both introduce given information into discourse. The pairing together of S and A motivates a nominative category, namely a category that marks topical information, while new information is introduced into the discourse in the O or oblique role. Moreover, data on anaphoric links across successive clauses show that S/A links far outnumber S/O links. Thus the topic continuity dimension also defines for Chinese a nominative/accusative {S, A} alignment.

Word order in Chinese is shown to be more sensitive to valency role than to discourse pragmatics, though both factors are highly predictive of word order. The present study suggests that Chinese is aligned with other type C languages à la Faarlund (1992) (e.g. Norwegian and English) where the only device available for expressing primary semantic (e.g. that of the agent) and primary pragmatic functions (e.g. that of topic) is linear order. However, Chinese differs from these other type C languages in that when there is a conflict between semantics and pragmatic functions, type C languages typically resolve the conflict by availing themselves of a syntactic role changing process (e.g. passive), while Chinese typically relies on a complex interplay between semantics and pragmatics for its resolution.

This paper focuses on a description of discourse properties of Chinese and on the relevance of these properties for word order. In this paper we challenge some prevailing assumptions. One main assumption we challenge is that Chinese is a topic-prominent language. Another related assumption we challenge is that word order in Chinese is primarily determined by pragmatic considerations. We prefer to believe that Chinese is not more of a topic-prominent language than English and that Chinese is a balanced word order language in the sense to be explicated in the following pages. Below we will first present structural facts of word order in Chinese and functional facts of the discourse-pragmatics of nominal arguments. We will then interpret the correlation between word order and discourse-pragmatic functions.

2. Data

Since there is some evidence that properties of information flow vary from genre to genre, we chose one ordinary conversation and two oral narratives in Mandarin Chinese as the corpus for this paper. The conversation, a spontaneous dinner-table chat among one female and three males, centered around the people and the events taking place

in the office where the participants worked. The conversation ran to 40 minutes long and totaled 1049 clauses (clause fragments not counted), where clauses are defined as a predicate element together with its argument(s).

The two narratives were retellings of the stories about the Ghost film and the Pear film. The Pear narratives of different languages have been employed for information flow studies, such as Chamorro (Scancarrelli, 1985), Japanese and English (Iwasaki, 1985), and Sacapultec (1987). The Chinese Pear narratives were produced in 1976 by eighteen female speakers who were undergraduate students at National Taiwan University. After they had viewed the 16 minute-long film, each was taken individually into a room where a female interviewer, not an acquaintance of the interviewees, explained that she had not seen the movie and asked the speaker to recount to her the story of the film. These data formed the basis of an earlier study on referential choice in Chinese (Chen 1986).

The Ghost narratives were obtained in an analogous fashion, though there were differences in detail. First, Ghost was a full-length film lasting 127 minutes. Secondly, four narrators, two females and two males, had already seen the film over one year before the taping sessions in the speech laboratory of their office, where they recounted the film to the interviewer. Since the narrators and the interviewer were office mates rather than strangers, their narrations were produced in a more 'relaxed' and 'natural' fashion.

Our database then consists of 116.6 minutes of text, transcribed into intonation units, of which there are 5297. An intonation unit (IU) is a spurt of talk produced under a coherent intonation contour, often bounded by a pause (Chafe 1987).

Table 1 summarizes the recording time and the number of clauses produced in each text. Only clauses with overt or covert but recoverable arguments are tabulated in the count; clause fragments are excluded from the tabulation.

Recording time (min.)	IUs	Clauses	Main clause
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conversation	38.8	2020	1049	1006 (95.9%)
Ghost	36.1	1289	621	580 (93.4%)
Pear	41.7	1988	1000	965 (96.5%)

Table 1. Summary of data.

It is of interest to note that of the clauses produced, main clauses predominated in each text, at something like 95%, and that there is no significant difference in percentage between any two types of texts, though one might have expected the conversation text, with frequent topic changes and less dwelling on details of events, to have a much higher proportion of main clauses. By contrast, in Ghost and Pear there would be much more of the tellers' attempt to successfully reconstruct the stories of the films, which, in the case of Ghost, contain a significant amount of the portrayal of the inner world of the protagonists and therefore would seem to call for a wider-ranging use of mental and psychological predicates with accompanying sentential complements.

3. Methodology

For the present study, a basic unit of analysis is the clause, which consists of a predicate and its core argument NP's. It is important to observe that the clause and the intonation unit often coincide in languages like English, but non-clausal intonation units appear to be much more pervasive in Chinese spoken discourses. Analysis of our data indicates that on average it takes approximately two intonation units to make up a clause (5297/2670).

There were a total of 1592 main clause NPs in the texts, but since some of the NPs were predicate nominals, indirect objects or question words, only 1433 were analyzed for purposes of this study. These NPs were coded for their grammatical role, morphological type, activation state, identifiability, generality and semantic class.

4. Valency role orders

In the following discussion, surface core arguments A, S, and O will be termed valency roles in preference to the more usual syntactic roles (e.g. Payne 1987). Following Dixon

(1979), A and O refer to the typical agent and patient of a transitive verb and S the single argument of an intransitive verb. The data consist of 1287 core arguments and 146 obliques (159 NPs were of other minor categories).

Two activation states of NPs were distinguished. 'Given' NPs are those that have already been activated at the point in the speech act where the NP appears. 'New' referents refer to any referents that are not given. An 'identifiable' NP is one whose referents the speaker assume the listener can identify close enough to satisfy the curiosity of the hearer. A referent may be identifiable by virtue of previous mention, situational setting, or the frames invoked etc. (Chafe 1987, 1994).

The text data show that a strongly preferred order of nominal arguments, relative to the verb, can be identified. Table 2 presents various valency role orders for clauses that have two, one, or zero overt arguments. An argument role within parentheses means that that nominal argument can be recovered from discourse, but is covert. O<*ba*> and O<*lian*> mean that the O role is marked by *ba* or *lian*. AOV refers to the *ba* construction.

	C	G	P
AVO	110	102	125
AOV	3	7	27
OAV	6	1	1
VO	21	4	6
V(O)	3	0	0
(A)VO	65	52	101
AV(O)	6	1	2
OV	1	0	0
O(A)V	7	0	2
O<ba>V	1	0	0
(A)O<ba>V	8	16	49
(A)O<lian>V	1	0	0
A(O<ba>)V	4	1	14
O _s A<bei>V	0	2	0
(A)V(O)	0	1	0
SV	227	121	188
VS	16	16	94
(S)V	109	37	122
V(S)	1	0	0
VSp _{ostposed}	0	1	0
Total	589	362	731

Table 2. Distribution of various valency role orders.

AVO	337
AOV	37
OAV	8
VO	249
OV	85
AV	30
SV	536
VS	127
V	273
total	1682

Table 3. Distribution of various valency role orders (distilled from Table 2.).

As shown in Table 3., the most common clause types in the corpus are AVO for transitive clauses and SV for intransitives. Furthermore VO order outnumbers OV order by a 4.5:1 ratio (586:130).

Table 4. shows the distribution of clauses with zero, one, and two missing arguments in relation to transitivity.

number of missing arguments	Transitive	Intransitive	Total
0	382	662	1044
1	362	269	631
2	4	—	4
total	748	931	1679

Table 4. Distribution of clause types as a function of missing arguments.

As seen in Table 4., unlike other languages that have been worked on (e.g. Papago, Sacapultec), there is no marked tendency in Chinese for clauses to have one less overt core argument than the number allowed, suggesting that zero anaphora is a syntactically restricted phenomenon, a point we will come back to in the final section of the paper.

Table 5. presents cross-tabulations of valency roles (A, S, and O) with pre- vs. postverbal position for clauses with one

and two overt core arguments in the conversation text. Tables 6. and 7. present the same cross-tabulations for the Ghost and Pear texts.

	A		S		O		total
	N	%	N	%	N	%	N
Preverbal	119	100.0	227	93.4	9	7.6	355
Postverbal	0	0.0	16	6.6	110	92.4	126
total:	119	100	243	100	119	100	481

$$(X^2 = 360.66, \text{d.f.} = 2, p < .01; \phi = .86)$$

Table 5. Syntactic role and pre- vs. postverbal order (conversation).

	A		S		O		total
	N	%	N	%	N	%	N
Preverbal	110	100.0	121	88.3	8	7.3	239
Postverbal	0	0.0%	16	11.7	102	92.7	118
total:	110	100	137	100	110	100	357

$$(X^2 = 259.61, \text{d.f.} = 2, p < .01; \phi = .85)$$

Table 6. Syntactic role and pre- vs. postverbal order (Ghost).

	A		S		O		total
	N	%	N	%	N	%	N
preverbal	153	100.0	188	66.7	28	18.3	369
postverbal	0	0.0	94	33.3	125	81.7	219
total:	153	100	282	100	153	100	588

$$(X^2 = 222.05, \text{d.f.} = 2, p < .01; \phi = .61)$$

Table 7. Syntactic role and pre- vs. postverbal order (Pear).

Tables 5~7 show that, unlike Papago, which is a flexible word order language, pre- versus postverbal order of nominal arguments are strongly associated with valency roles. Not only are the X^2 values highly significant, but the ϕ statistics also show a very strong association between form (pre- vs. postverbal order) and function (valency roles). The significance of the association results primarily, especially in

conversation and Ghost, from the strong placement in the preverbal position of A and S and the nearly equally strong placement in the postverbal position of O.

Tables 5~7 also show that as expected, there is a one-to-many correlation from form to function, since the preverbal position may be either A or S, though the postverbal position is nearly categorically O. The very same data in Tables 5~7 can be rearranged, as correlations from function to form. When this is done, it can be readily seen that there is a near-categorical tendency for A and S to appear in preverbal position, and O in postverbal position, since the mean prediction rate is a respectable 91.4%. This result of course is also deducible from the earlier observation that AVO is the dominant word order in the corpus.¹

5. Word order and information status of NPs

In the following discussion, two activation states are distinguished for NPs. A nominal is considered given if its referent has already been activated at the point in the speech act where the nominal appears. ‘New’ referents refer to any nominals that are not given. Accessible referents that have not been mentioned but are frame-based are treated as new information in this paper.

Table 8 presents the cross-tabulation of new/given information with valency roles. Pre-S in the table means preverbal S.

	Given		New		total
	N	%	N	%	N
A	1182	97.4	32	2.6	1214
Pre-S	812	92.5	66	7.5	878

Table 8. Distribution of new/given information with valency roles.

Tables 5-8 show that clause-initial position is used to encode primary semantic role (agent) and primary pragmatic role (topic, given information). When there is a conflict in the

assignment of the two functions, Chinese rarely uses the syntactic-role changing process (passive) to resolve the conflict, but relies on a complex interplay between semantics and pragmatics for its resolution, since passives are hardly ever used, accounting for just 0.1% of the data.

But how does word order correlate with discourse pragmatics? Table 9 presents cross-tabulations of activation states of nominal arguments (given, new) with pre- vs. postverbal position in the conversation text. Tables 10~11 present the same cross-tabulations for the Ghost and Pear texts.

	Given		New		total
	N	%	N	%	N
Preverbal	314	88.5	41	11.5	355
Postverbal	74	58.7	52	41.3	126
total:	388		93		481

$$(\chi^2 = 52.67, \text{d.f.} = 1, p < .01; \phi = .33)$$

Table 9. Information status and order (conversation).

	Given		New		total
	N	%	N	%	N
Preverbal	224	93.7	15	6.3	239
Postverbal	56	47.5	62	52.5	118
total:	280		77		357

$$(\chi^2 = 99.96, \text{d.f.} = 1, p < .01; \phi = .53)$$

Table 10. Information status and order (Ghost).

	Given		New		total
	N	%	N	%	N
Preverbal	333	90.2	36	9.8	369
Postverbal	89	40.6	130	59.4	219
total:	422		166		588

$$(\chi^2 = 166.91, \text{d.f.} = 1, p < .01; \phi = .53)$$

Table 11. Information status and order (Pear).

Tables 9~11 show that pre- versus postverbal order of nominal arguments are strongly associated with their information status. However, all three of the statistics show the association to be much weaker than that between word order and valency roles. They also show that, again as expected, there is a one-to-many correlation from form to function, since the postverbal position may equally be given or new in all of the three texts, though there is a near-categorical tendency for the preverbal position to be given.

The very same data in Tables 9~11 can be recomputed, as correlations from function to form. When this is done, it can be readily seen from Tables 12~14 that the function-form mapping is hardly ambiguous: both the 80:20 ratio vs. 19.5:80.5 ratio for the Ghost text and the 79:21 ratio vs. 26:74 ratio for the Pear text are in the same direction. However, it can be easily determined that the mean prediction rate (for predicting word order on the basis of given vs. new information) is just 75.7%, which is not only lower than the 91.4% prediction rate for valency roles cited earlier, but also lower than the normal value of 80%~90% for code fidelity (Givón 1992).

	Preverbal		Postverbal		total
	N	%	N	%	N
Given	314	80.9	74	19.1	388
New	41	44.1	52	55.9	93
total:	355		126		481

Table 12. Information status and order (conversation).

	Preverbal		Postverbal		total
	N	%	N	%	N
Given	224	80	56	20	280
New	15	19.5	62	80.5	77
total:	239		118		357

Table 13. Information status and order (Ghost).

	Preverbal		Postverbal		total
	N	%	N	%	N
Given	333	78.9	89	21.1	422
New	36	21.7	130	78.3	166
total:	369		219		588

Table 14. Information status and order (Pear).

We have shown, then, that word order in Chinese is far more sensitive to valency roles than to activation states (given, new) of nominal arguments. This is an important finding, since linguistic literature has continued to perpetuate claims about the nature of Chinese word order that run counter to the above finding. To cite just two references. Li and Thompson (1978: 687) made the following observation: “— Word order in Chinese serves primarily to signal semantic and pragmatic factors rather than grammatical relations such as subject, direct object and indirect object”. Similarly, LaPolla(1990: 31) holds that “— word order is to the largest extent controlled by the nature of information flow and secondarily by semantics. Syntactic functions play no part in the determination of the order of constituents in a sentence”. When confronted with the real discourse data, observations such as can be seen as needing revision.

We have shown that word order in Chinese is more sensitive to valency roles than to activation states of nominal arguments, though both factors are highly predictive of word order. What this means is that there are still subpatterns of word order which deviate from the preferred order of AVO or SV in response to certain discourse-pragmatic functions. Among the subpatterns two are the most frequent: existential VS and the marked AOV order. We assume that a language with a more rigid AVO order than Chinese would show the corresponding phi statistics for activation states to be much higher in values.

If word order in Chinese is more sensitive to valency roles than to activation states of nominal arguments, what

remains to be demonstrated is whether word order is also sensitive to other dimensions of discourse pragmatic information.. This will be attempted in the following section.

6. Word order, identifiability and generality

Identifiability is a discourse category used to characterize the speaker's assumption about whether a particular referent can be identified by the hearer. An NP is identifiable if the speaker intends and believes that the hearer can mentally tag the information as identifying a particular referent which will have continuous identity over time. A non-identifying expression is one which is either non-referential or for which the speaker believes the hearer cannot tag the information as identifying some particular entity. Generality as a discourse property concerns whether a referent refers to a particular entity (particular) or a class of entities (generic)(Du Bois and Thompson 1992).

Table 15 presents cross-tabulations of activation states, identifiability and generality of nominal arguments with pre- versus postverbal O. Table 16 presents the same cross-tabulations for pre- versus postverbal S.

	Preverbal O		Postverbal O		total
	N	%	N	%	
Given	113	86.3	449	61.1	304
New	18	13.7	286	38.9	562
total:	131	100	735	100	866
	($X^2 = 30.9$, d.f. = 1, $p < .01$; $\phi = .19$)				
Identifiable	112	85.5	535	72.8	647
Non-identifiable	19	14.5	200	27.2	219
	($X^2 = 9.35$, d.f. = 1, $p < .01$; $\phi = .10$)				
Generic	13	9.9	244	33.2	257
Particular	118	90.1	491	66.8	609
	($X^2 = 29.05$, d.f. = 1, $p < .01$; $\phi = .18$)				
Human	27	20.6	225	30.6	252
Non-human	104	79.4	510	69.4	614
	($X^2 = 5.27$, d.f. = 1, $p < .01$; $\phi = .08$)				

Table 15. Pragmatic and semantic categories and the order of O.

	Preverbal S		Postverbal S		total
	N	%	N	%	N
Given	812	92.5	39	31	851
New	66	7.5	87	69	153
total:	878	100	126	100	1004
($\chi^2 = 327.3$, d.f. = 1, $p < .01$; $\phi = .57$)					
Identifiable	819	93.3	30	23.8	849
Non-identifiable	59	6.7	96	76.2	155
($\chi^2 = 419$, d.f. = 1, $p < .01$; $\phi = .65$)					
Generic	83	9.5	27	21.4	110
Particular	795	90.5	99	78.6	894
($\chi^2 = 15.46$, d.f. = 1, $p < .01$; $\phi = .12$)					
Human	691	78.7	89	70.6	780
Non-human	187	21.3	37	29.4	224
($\chi^2 = 4.24$, d.f. = 1, $p < .05$; $\phi = .06$)					

Table 16. Pragmatic and semantic categories and the order of S.

A number of significant results emerge from Tables 15 and 16. First, the semantic category human/non-human has little predictive value for order as expected. Secondly, generality is also a poor predictor of word order. Thirdly, activation state and identifiability work in parallel in the predictive success with word order. In other words, word order can be equally well or equally poorly predicted on the basis of either activation state or identifiability. Thus they are equally strong predictors of pre- vs. postverbal S, but equally poor predictors of pre- vs. postverbal O. These results taken together suggest that morphological types of nominal arguments in Chinese are used essentially to encode just one of two types of information: either the more linguistic context-bound activation states or identifiability, which has a stronger mix of extra-linguistic components, since pathways to identifiability include not only previous mention, but also situational settings and invoked frames.

Tables 15 and 16 further show that the structural split of S

is strongly motivated by discourse pragmatics, but the structural split of O much less so, since the phi statistics are much higher for the former. This is a significant finding, as it bears directly on the pragmatic status of the AOV sentences, a point to be taken up presently. In addition, it can be easily determined that the prediction rates from pragmatic categories to pre-/postverbal S order are respectively 80.8% for activation state (given/new), and 84.8% for identifiability. If we believe with Givón (1992) that the perceiving mind needs a code fidelity somewhere about or above the level of 80% prediction rate for it to begin to bet on a 100% categorical distribution and ignore the margins, then Chinese can be said to have nearly grammaticized the scalar distribution of various pragmatic properties of nominal arguments in preverbal and postverbal S positions as identifying respectively an existential construction for the latter and an intransitive sentence for the former.ⁱⁱ But the same cannot be said of the structural split of O. The low ϕ statistics in Table 15 mean that there would be little predictive success from function to form. Thus the prediction rate from activation state to order is a mere 57.5%, and that from identifiability to order is 56.3%, both of which are at chance level. The prediction rate from particular to order is higher, at 61.5%, which is still nowhere near the threshold 80% of code fidelity required of categorical distribution. These results are worth stressing, since the discourse functions of preverbal vs. postverbal O have been a major bone of contention among Chinese linguists.

7. Topicality hierarchy

The present data indicate that 98% of the time the clause-initial position is preempted by an NP which is either an A (and hence categorically topic of the clause) or a (preverbal) S (and hence also categorically topic of the clause). The clause-initial NP then represents a convergence of semantic (“role”) properties of agent and the pragmatic (“reference”) properties of clausal topic. A and S are much more topical than O not only in their greater propensity to

preempt the clause-initial position but also in their stronger tendency to form continuous anaphoric links across successive clauses. To measure topic continuity across different valency roles, anaphoric links across adjacent clauses are tabulated according to the valency roles in which the co-referential referents occur in the two clauses. For example, if the pronominal *ta* 'she' in (1) appears in the A role in clause (a), but re-appears as S in the succeeding clause (b), then this particular link across A and S is tabulated as an instance in the linkage class of 'A-to-S'.

- (1) a. → Y: ...yinwei **ta** yiqian,
 because 3.SG previously
 'Because she previously,
 conglai mei you zhe ge jingyan a.\
 ever NEG havethis CL experience PRT
 did not ever have this kind of experience,
- b. → ...suoyi%suoyi na ge **nude** jiu
 so so that CL woman thus
 xiayitiao.\
 be.frightened
 so that woman was frightened.' (GHOST 4:207–10)

Tables 17~19 present the distribution of various types of anaphoric links for A, S, and O.

	N	%
A-to-A type	400	63.3
A-to-S type	201	31.8
A-to-O type	31	4.9
total:	632	100

Table 17. Anaphoric linkage of A (After Chui 1994:64–65).

	Preverbal		Postverbal	
	N	%	N	%
S-to-S type	208	47.1	7	19.4
S-to-A type	210	47.5	25	69.4

S-to-O type	24	5.4	4	11.1
total:	442	100	36	100

Table 18. Anaphoric linkage of S ($X^2=10.53$) (After Chui 1994:104–105).

	Preverbal		Postverbal	
	N	%	N	%
O-to-A type	5	17.2	40	25.5
O-to-S type	5	17.2	40	25.5
O-to-O type	19	65.5	77	49.0
total:	29	100	157	100

Table 19. Anaphoric linkage of O ($X^2=2.56$) (After Chui 1994:84).

Since the total number of nominals in A, preverbal S, postverbal S, preverbal O and postverbal O in the corpus are respectively 1214, 878, 126, 131 and 735, we can easily determine that the percentages of various valency roles forming anaphoric links are as shown in Table 20.

	all texts		Ghost & Pear only	
A	52%	632/1214	59%	484/819
preverbal S	50.3%	442/878	57.2%	290/507
postverbal S	28.6%	36/126	31%	34/110
preverbal O	22.1%	29/131	22.6%	26/115
postverbal O	20%	147/735	21.4%	104/486

Table 20. Percentage of valency roles forming anaphoric links.

As shown in Table 20, A and preverbal S are, as expected, consistently the most predictable, continuous and topical valency roles, followed by postverbal S, pre- and postverbal O in the two separate distribution tabulations (all texts considered together or just narrative texts only). X^2 tests show that there is no significant difference either between the first two roles or among the last three roles (though postverbal S exhibits stronger anaphoric links than the two O roles, the difference falling just short of statistical significance). One may thus suggest the following topicality

hierarchy for valency roles defined in terms of their ability to form anaphoric links:

$$(2) \quad \left\{ \begin{array}{c} A \\ \text{preverbal S} \end{array} \right\} > \left\{ \begin{array}{c} \text{postverbal S} \\ \text{preverbal O} \\ \text{postverbal O} \end{array} \right\}$$

Since A and preverbal S are overwhelmingly given (97.4% for A; 92.5% for preverbal S), identifiable (94.8% for A; 93.3% for preverbal S) and human (94.6% for A; 78.7% for preverbal S), they are therefore the most continuous and predictable arguments. By contrast, all other valency roles should by implication rank lower on the topicality hierarchy in an asymmetric ‘figure-ground’ sort of distinction, since if preverbal valency roles are maximally topical, then one would expect postverbal valency roles to be maximally non-topical. It is easy to see why this should be the case. In a language with a preferred word order of AVO, the postverbal O position is where relatively incidental or unimportant information to the development of the narrative goes (the so-called “unimportant information last principle”). Nominal arguments that appear there tend to be new, non-identifiable and/or non-human. On the other hand, postverbal S is where the thematic development of the story line is discontinued, and new entities are introduced into discourse for the first time, often at points of higher thematic discontinuity (e.g. at paragraph or topic chain boundary points), reserving the preverbal S position for the more topical, identifiable and/or human referents. Most of the postverbal initial mentions on S have little thematic continuity (i.e. are not needed in subsequent discourse), just as most of the postverbal mentions on O do.

But why should preverbal O rank lower on the hierarchy just as postverbal O and postverbal S do? We have shown above that the structural split of O is hardly motivated by discourse pragmatics. On the one hand, the low ϕ statistics

already tell half of the story. On the other, the 86.3:13.7 ratio versus 61.1 : 38.9 ratio for given/new, or the 85.5:14.5 ratio versus 72.8:27.2 ratio for identifiability, or 79.4:20.6 ratio versus 69.4:30.6 ratio for humanness (see Table 14) are all in the same general undramatic direction. It should not be surprising therefore that both postverbal O and preverbal O should have turned out to rank equally low on the topicality hierarchy.

We have shown that the low statistics in Table 15 mean that there would be little predictive success from function to form. Still, it is true that there is a significant statistical difference in the distribution of discourse categories between preverbal and postverbal O (see Table 15), though apparently that difference has not translated into a difference in their ability to form topicality links. A question that naturally arises is what discourse function the marked AOV order serves.

Since languages do not in general code topic continuity, that statistical difference must mean that some other discourse-functional feature mediates that difference. The working assumption here is not that it is the topicality linkage that is being coded, but that both the topicality linkage and the observed statistical differences reflect some deeper discourse function. Now there are basically four primary discourse functions for NPs: that of introducing referents into discourse, that of establishing referent identity, that of predicating an argument, and that of attracting attention. In Chinese, the preferred word orders (AVO, SV) serve the second and third functions, and the VS construction serves the first function. What word order serves the third function? It could be either OAV or the more frequent AOV. Givón (1987) shows that the use of the structural device of preposing to signal discourse function of both low informational predictability and high thematic importance is widely attested in a number of typologically diverse languages. In other words, preposing a constituent is a cognitive device for attracting attention to it. Sun and Givón (1985) suggest, based on measurements of referential distance (RD) and potential interference (PI), that

the correlation between OV order and definite (which can be equated to identifiability in the present study) in Chinese is the direct effect of such a contrastive device.

However, there are several lines of evidence that suggest that Sun and Givón's suggestion can't be right. We have shown above that the structural split of O is not strongly motivated by discourse pragmatics. In addition, we have gone through the AOV sentences in the data and found that they have not entirely divorced from their semantic origin as 'disposal' constructions. All of the verbs in these sentences are high transitivity verbs that require an agent and take a resultative or directional complement (there are a total of 71 such verbals). (3) is an example.

- (3) Z: ...ta de nagepengyou shi yinwei%,_
 3.SG DE that friend COP because
 'It is because his friend
 ...^(H) yinwei yao%... yao=?/
 because REPAIR REPAIR
 → ...you **yixie heiqian.**\
 have some black money
 had some black money.'
 ranhou= ta yao% --
 then 3.SG have to
 'Then, he had to
 → ...ta **ba naxie heiqian=,**_
 3.SG BA those black money
 have that black money,
 ...^(1.1) ^yung gezhong butongde%,_
 use any kind different
 using different kinds of
 ...butongde guandao.\
 different way
 different ways,
 ranhou.\
 then
 then,
 → ..**ba zhexie.. qian.**\
 BA these money
 had this money

...xi= xiqian.\
 REPAIR launder money

laundered.’

ranhou?/

then

‘Then,

...xiqian zhihou.\
 launder money after

after laundering money,

...zh- yung zhuan% --

 REPAIR use REPAIR

(he) used

..yinhang zhuanzhang de fangshi.\
 bank transfer DE method

the method of bank transfer,

...(H) ranhou.\
 then

then,

→ ...ba zhexie qian.\
 BA these money

had this money

..you guihui dao..yuanlai ta de zhanghu.\
 again return to original3.SG DE account

returned to his original account again.’ (GHOST

1:43–59)

This means that the marked AOV sentences take the form they do because of greater semantic transitivity involving an agent affecting a patient in a specific way. It has been shown that positive marking for O, whether it be signalled by position or case marking is indicative of greater semantic transitivity (Hopper and Thompson 1980). Secondly, contrastivizing is often also a topicalizing device. (Indeed Givón (1992) calls the OV order a contrastive topicalizing device). However, we have shown that preverbal O and postverbal O behave similarly in their (in-)ability to form topicality links, suggesting that the OV order cannot be a topicalizing device. Furthermore, we have also surveyed our

data but found little evidence of the AOV sentences as a contrastive device.

We have thus arrived at a paradoxical situation. On the one hand, AOV sentences are structurally marked in that they deviate from the more basic AVO order, and yet they are not pragmatically marked. However once we realize that the marked AOV sentences take the form they do because of the nature of verbal semantics, then the alleged paradox disappears. In any case it would be misleading to call AOV sentences pragmatically marked constructions, since they have been shown to mark no contrastive focus and have shown no evidence of marking a major topic change, at least in the present data.ⁱⁱⁱ

8. “Subject”-like properties in clause-initial position

If we disregard positional role differences in S or O, and if we sum all of the various types of anaphoric links (see Tables 17~19) regardless of directionality, we find that the most preferred links are either identical links with A, S (i.e. A/A, S/S), or non-identical S/A links, as Table 21. shows:

Anaphoric types	N	%
A/A	400	32.5
S/S	208	16.9
O/O	77	6.3
S/A	411	33.4
S/O	64	5.2
A/O	71	5.8
total:	1231	100

Table 21. Types of anaphoric links (After Chui 1994:140).

The results shown in Table 21. suggest that co-reference across adjacent clauses is fairly independent of valency roles, since any anaphoric link is possible.^{iv} However, since 82.8% of the links (A/A, S/S and S/A) are co-reference under identity of primary topic (A or S), the clause-initial NP position in Chinese, which represents a convergence of

primary semantic (“role”) property of agent and primary pragmatic property of clausal topic, has thus a reference-related ‘subject’ property characteristic of languages where subject is syntactically important. Furthermore, the fact that S/A anaphoric links are the most common preferred way of forming anaphoric links suggest that a S/A pragmatic pivot in the sense of Foley and Valin (1984:119) has begun to emerge, a pivot which neutralizes the valency role distinction between S and A, and which is determined by the demands of topicality and cross-clause linkage under coreference. Chinese is thus unlike Eastern Pomo, a strict active-stative language whose switch-reference system seems to monitor semantic roles of actor and undergoer directly, not the more abstract S/A semantic pivot, nor the most abstract S/A pragmatic pivot (Foley and Valin 1984:121). However, the rarity of passive *bei* sentences in the data (there being only 2 out of 1682 clauses, or just 0.1%, which is far fewer than the 3–4% range reported for spoken German, and perhaps for other subject-prominent languages as well) strongly suggest that changes in the pragmatic role of a nominal in Chinese do not depend on changes in “syntactic role”, and that Chinese does not have the kind of pivot system found in either English or Dyirbal where the choice of pivot is strictly governed by the exigencies of topicality and interclausal linkage under coreference, hence necessitating the use of passive or antipassive construction to permit alternative choices of pivot when required by context. Chinese appears, then, to be opting for the “Philippine style” solution, whereby the overall order is highly sensitive to both valency roles and pragmatic information, and yet preverbal S/postverbal S order is strongly influenced by the pragmatic properties of the nominal arguments. A strictly reference-prominent (or subject-prominent) language would have opted for a more ‘unified’ syntactic treatment of S rather than a structural split of S motivated by semantic or discourse-pragmatic considerations.

9. Conclusion

To summarize, Chinese represents a language where semantic role and pragmatic reference have been more or less grammaticized (given syntactic encodings) and are expressed by the same means, linear order, but role-changing morphosyntactic processes are rare. Such a language tends to discourage a patient from being a topic or taking the clause-initial position to avoid the conflict between an agentive topic and a non-agentive topic. This is indeed the case in Chinese. Table 2 shows that OAV, OV, and *bei* sentences together account for just 0.4% of all clause types.

A/S in Chinese has acquired some ‘subject’ properties, though perhaps not all of the subject properties characteristic of subject-prominent languages (e.g. subject-verb agreement or subject-creating constructions), and since initial position has not yet become completely divorced from its pragmatic origin (there being no dummy subject-creating constructions), it might be more advisedly termed a category of “grammaticalized topic” in the sense of Comrie (1988), distinct from topic and from subject.^v

To return to the question posed in the title of this paper: Is Chinese a pragmatic order language? A pragmatic order language is a language where pragmatic considerations are primary determinants of word order. Papago, Ute and Nez Perce are among the languages often cited as belonging to this type of language. But we have shown that word order in Chinese is far more sensitive to valency roles than to pragmatic considerations. Secondly, double-subject constructions, often cited as characteristic of ‘topic-prominent’ languages such as Chinese, actually occurred with such rarity (accounting for just 1.8% of the clauses in the corpus, or 50/2670) that they must be considered as an “unusual” way of making a discourse point. Thirdly, pervasive use of ZA (zero anaphora) is also taken as a defining characteristic of a topic prominent language such as Chinese. The following statement is typical of such line of thinking:

— noun phrases in Chinese that are understood from context do not need to be specified.— It is sometimes difficult for speakers of Indo-European languages to grasp because the use of pronouns is so much more common in Indo-European, especially in English (Li and Thompson 1981: 657)

Use of ZA (zero anaphora) is certainly an index of the role pragmatics play in a given language, though not necessarily in its word order. Gundel (1987) has observed that the more topic-prominent a language is, the less restricted the distribution of zero anaphora in that language.^{vi} Li and Thompson (1981) would have been much more on target had they chosen Japanese as an example of a language marked by an extensive use of ZA, since recent research fails to show that Chinese exhibits a significantly greater propensity to use ZA than does a subject-prominent language such as English, as the following table amply shows.

	Chinese		English	Japanese
	Huang (1992)	Chui (1994)	Chen (1986)	Chen (1986)
NA	43.3%	41.8%	—	—
PA	34.7%	34.8%	—	—
ZA	22%	23.3%	20.5%	73.2%

Table 22. Distribution of anaphoric types.

English is standardly taken as a language in which the grammaticization of topic into subject has gone to the fullest extent, but it does not differ in any interesting way from Chinese in the distribution of given/new information with respect to valency roles, as Table 23 shows.

A	Given		New	
	Chinese	English	Chinese	English
	1182 (97.4%)	206 (94.9%)	32 (2.6%)	11 (5.1%)

(pre-) S	812 (92.5%)	233 (92.1%)	66 (7.5%)	20 (7.9%)
(post-) O	449 (61.1%)	86 (52.4%)	286 (38.9%)	78 (47.6%)

Table 23. Distribution of information and valency roles in Chinese and English (Chui 1994, Kärkkäinen 1994).

This simply means that Chinese is just as much a syntactic order language as a language like English. Indeed we have shown above that word order in Chinese is much more sensitive to valency role than to discourse pragmatics, unlike flexible word order languages such as Papago or Nez Perce where word order is only weakly associated with valency roles, but overwhelmingly determined by pragmatic information encoded in a particular clause (Payne ed. 1992).

To conclude, the present data clearly demonstrate that word order in Chinese is much more sensitive to valency role than to discourse pragmatics and that in many ways Chinese is just as much a syntactic order language as a language like English. We have also suggested that since initial position in a Chinese clause has not yet become completely divorced from its pragmatic origin, it might be more advisedly termed ‘grammaticalized topic’, distinct from topic and subject.

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Notes

ⁱThe Pear text, as can be seen from Table 7, as compared with the Ghost text, contains a significant percentage of post-verbal S's (33%). It is not completely clear to us why there should be such a disparity in the distribution of postverbal S's in the two narrative texts.

ⁱⁱPayne (1992) points out that two factors often obfuscate a 100% relationship between a grammaticized function and a linguistic form. One factor has to do with the on-line nature of unplanned discourse. Another factor has to do with the fact that a given function can be encoded in more than one way, depending on interaction of factors.

ⁱⁱⁱLaPolla (1992) argues that *ba* marks non-topical anti-ergative argument and functions to disambiguate two potential agents. But there is no evidence this is what is at work in the data. Our data shows that 94.6% of the A's are humans, but 80% of the preverbal O's are non-humans, and can hardly qualify as potential agents.

^{iv}The following table shows that an argument shared by two conjoined adjacent clauses (with or without an explicit connective) can be represented by a zero in the second clause without observing the constraint characteristic of the accusative language that it be in the A or S role in both clauses. Figures in the denominators represent occurrences of anaphoric links and those in the numerators represent instances of anaphoric links where the coreferential argument in the second clause is a zero anaphor.

	<u>C</u>	<u>G</u>	<u>P</u>
A→A	46/94	57/108	112/174
A→S	26/55	23/47	53/80
A→O	2/9	0/11	1/7
O→O	19/32	2/10	5/22
O→A	6/9	4/14	4/12
O→S	3/9	0/12	1/8
S→S	49/96	25/34	58/76
S→A	22/47	35/63	72/85
S→O	0/8	0/6	3/7

^vNote that there is no subject agreement in Norwegian, an otherwise subject-prominent language. It is also noteworthy that the pragmatic origin of subject in English is still evidenced by the so-called indefinite subject constraint.

^{vi}An anonymous referee questions the validity of Gundel's observation, pointing out that there are many languages with a lot of zero pronouns (subject and object) (e.g., Georgian, with subject and object agreement), but such languages do not exhibit other symptoms of topic-prominence. Conversely, German is generally taken to be a topic-prominent language — its 'first-prone' position is routinely taken, in the Germanic studies literature, to mark the topic of a sentence. But German allows very little zero anaphora — allowing zero anaphora only for the first position, in fairly informal style.