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Topic, Contrast, Definiteness, and Word Order in Mandarin

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1.0 The positioning of nominal constituents around the verb has been a major source of controversy in Mandarin syntax and discourse studies. We will deal with three claims in particular: 1) preverbal (XV) vs. post-verbal (VX) position correlates with definiteness:

- 1a. Sǐ rén le vs. b. Rén sǐ le
die person asp. person die asp.
`a person has died'                      `the person is dead'

In (1a) an indefinite interpretation is strongly implicit in the postverbal nominal rén, while in (1b) a definite interpretation is strongly implied by its preverbal position. Next, 2) XV vs. VX correlates with contrastiveness or emphasis:

- 2a. Pài yī ge nánrén dào Běijīng, pài yī ge nǚrén dào Shànghǎi
send 1 CL man to B send 1 CL woman to S
`(they) sent a man to Beijing, and a woman to Shanghai'
- 2b. bǎ zhàngfu pài dào Běijīng, bǎ qīzi pài dào Shànghǎi
OM husband send to B OM wife send to S
`(they) sent the husband to Beijing, and the wife to Shanghai'

In (2a) no special contrast is implied between the man and woman, and VX is normal. In (2b) there is a pragmatically implicit strong contrast between the husband and wife, and XV order is strongly preferred. Finally, 3) position correlates with topicality:

- 3a. mén yī kāi, yī ge lǎotóu zǒu le jìnlái, bǎ mén guān shàng
door once open 1 CL old-man walk AM in OM door close up
zǒu dào zhuō biān zuò xià. `The door opened, an old man
walk to table side sit down walked in, closed the door, walked
up to the table and sat down'
- 3b.? mén yī kāi, zǒu jìnlái yī ge lǎotóu, bǎ mén guān shàng...
door lce open walk in 1 CL old-man OM door close up
`the door opened, in walked an old man, closed the door...

In (3a) the preverbal NP easily controls zero-anaphora in subsequent clauses, while it is harder for the postverbal noun in (3b) to do so. Zero-anaphora is closely related to topic continuity (Givón, 1983) suggesting that XV is a topic-marking device in Mandarin.

1.1 In their recent paper in Language on the pragmatic function of word order in Mandarin, Sun and Givón (1985) criticize Li and Thompson's (1975) hypothesis that "word order has taken on the

function of denoting the definite/indefinite property of nominals (p. 165)" i.e. that pre- and postverbal position have a strong correlation with definite and indefinite NPs, respectively. S&G present quantitative discourse data to show that this correlation is spurious.¹ They go on to claim that VO is the standard, unmarked position for objects, and that OV is a marked, "emphatic/contrastive discourse device," i.e. that speakers place an object preverbally in order to mark it as emphatic or contrastive. They tie this contrastive function to the general lesser, vs. greater, accessibility/continuity of an entity in discourse (Givon, 1983) and observe (p. 332) that L&T's definiteness hypothesis is in conflict with their contrast hypothesis through the tie with accessibility.

We will attempt to resolve the conflict between the definiteness and the contrast hypotheses by showing that they are each limited aspects of a more general phenomenon: the ways in which text mediates between speaker's and listener's knowledge structures. To do this we will present a concept of TOPIC based on speaker and listener knowledge structures, rather than on sentence/text constituents. The function of TOPIC, in our view, is PROACTIVE (forward-looking): it "sets a spatial, temporal, or individual framework (Chafe, 1976)" within which the following events of the discourse are interpreted. This function of TOPIC will be shown to have RETROACTIVE (backward-looking) consequences reflected in "topic continuity" and definiteness.

We will then attempt to show that our TOPIC concept is generally more compatible with S&G's data than their own contrast/emphasis hypothesis. In particular, we will a) predict the exact distribution of their definiteness data, which they fail to do; b) predict the results of their "referential distance" measure, equally predict their contrast effects, and finally, provide a better account of their emphasis effects, the focus of their argument. We thus hope to provide an explanatory framework to account for pre- vs. post-verbal position in Mandarin which brings diverse empirical data together into a unified account. This framework will presuppose an "open-text" theory of discourse structure which focuses on text as a negotiation between a speaker (writer) and listener (reader) by placing "structure" in the speaker's mental constructs leading to the production of text, and the listener's mental constructs resulting from text comprehension. Such a framework contrasts sharply with a closed-text theory which places structure in the text itself.²

2.0 Major problems with the concept of "topic" as previously used in linguistics have been a) insistence that a topic be a constituent of the text, and b) confusion between the proactive function of topics and the retroactive consequences of this function. In our definition of topic we attempt to rectify these problems:

2.1 TOPIC FUNCTION: A "topic" is an entity, place, time interval, etc. which the speaker uses as a frame of reference (or domain) within which the subsequent stretch of discourse is interpreted. Thus the communicative function of "topic" is proactive rather than

retroactive: its purposeful relation is to text which follows it, and not to the preceding discourse. Although topics may often be "old" or "given information," it is not their function to be so.³

Consequence A: topicality is a characteristic of speakers' (and consequently listeners') knowledge structures, and not a constituent of sentences or texts. However, the speaker may INVOKE (mention) a topic for the listener in the text.

Consequence B: since topics are domain specifiers, they will tend to remain in force over a stretch of text greater than one clause. (Without these multiple event domains, a discourse would unravel into a list. In particular, we propose that a place, time, or entity domain, once established by the speaker, will remain in force (i.e. remain "topical") until it is cancelled.

Consequence C: it follows from B that a "topic" is a relatively prominent part of the speaker's knowledge structure corresponding to a stretch of discourse.⁴ This, in combination with Clark and Clark's (1977) Cooperative Principle, suggests that speakers will tend to select as topic domains those places, time intervals, and entities which already form a prominent part of the listener's knowledge structure.

Consequence D: It also follows from B and from the Grice's Maxim of Quantity that the speaker will invoke a topic when there is communicative reason to do so: when a domain is cancelled and another is substituted for it ("topic shift"), when a potential competitor arises in the discourse ("referential interference"), when the speaker wishes to emphasize the event (cf. 3.43), etc. On the other hand, it follows from B and D that the speaker will not continue to invoke a topic once its domain has been established and remains in force.

2.2 TOPIC IDENTIFICATION (how the listener figures out what the topic domains are for each successive clause in a text): It follows from (A - D) that the listener can safely assume that for any specific clause, already-established topic domains are still in force, unless there are indications in the text to the contrary. Thus in many languages a major source of information for the listener about the topic domains for a particular event will be the lack of any topic identification in the text, i.e. 4.⁵ Secondly, the listener will look for (language-specific) low-information "reminders" which reinvoke a topic domain: pronouns or agreement markers for entities, adverbial particles, tense markers, etc. for time and place.⁶ Finally, the listener will take any more substantial invoking of a topic domain (e.g. by full NP) to signal either an identification problem (potential competitor, topic shift) or simple emphasis.

2.3. TOPIC MARKING: Topics are mental entities (consequence A) which on specific occasions the speaker will need to invoke in the text (Consequence C) so that the speaker will use it as a frame of reference for the following text (Topic Identification). For this purpose the speaker needs specific grammatical means for marking a text constituent as topical. These means are language specific;

in Mandarin, if a speaker wishes to mark a place/time/entity as topical in the sense of (2.1) s/he places the constituent which invokes it in front of the verb.⁸

3.0 Objective Correlates. A major problem with definitions of "topic" has been their vagueness and lack of predictive ability, a state of affairs which Givon (1983) laments with good cause. We hope to show that our TOPIC hypothesis outlined in section 2 is capable of making quantitative predictions about overall frequency of topic marking, definiteness, textual continuity and contrastiveness, and a qualitative prediction about emphasis.

3.1 Frequency of topic marking. It follows from Consequences B and D (2.1) that topics will be unspecified in the text (zero-anaphora) much more often than they will be invoked; i.e. topical objects in the text (OV) will be infrequent in comparison to non-topical objects (VO). Table 1 shows that VO outweighs OV in frequency by a ratio of 16/1 in written text, and by a ratio of 12/1 in spoken text. This data of course equally support S&G's hypothesis that the function of OV is to mark contrast.

3.2 Definiteness. It follows from Consequence C of Topic Function (2.1) that if an NP is marked as topical (XV), then it will almost always be definite. (Infrequent exceptions are predicted, however, since the speaker is not absolutely constrained by the proactive function of TOPIC to always choose an entity which is "definite" for the listener.) This yields the inferential implicature (4a) and its logically valid contrapositive (4b):

4a. topic (preverbal) ==> definite

4b. not definite (indefinite) ==> non-topical (postverbal)

The non-inferable converses of (a) and (b), however, are predicted not to hold:

4c. definite !=> preverbal

4d. postverbal !=> indefinite

Our TOPIC construct thus views definiteness as an inference from topicality, and predicts an asymmetric relation between the two concepts, given by (a) and (b), but not (c) and (d). L&T do not differentiate these four discrete implicational relations, and S&G assume, in rejecting their definiteness hypothesis, that they claim all four. Table 1 below shows that in S&G's own quantitative discourse data, (a) and (b) are strongly supported, while (c) and (d) are not.

Following implication (a), if an NP is topical (OV), then 76 out of 79 tokens (96%) are definite in written discourse. In spoken discourse 31 out of 32 topic tokens (97%) are definite. In sum, topicality implicates definiteness. But the inverse (implication c) is clearly disconfirmed: only 76 out of 991 (8%) definite tokens in

written discourse and 31 out of 320 (10%) in spoken discourse are marked as topical (OV), i.e. definiteness does not implicate topicality.

Following implication (b), if an NP is indefinite, then 276 out of 279 tokens (99%) are non-topical (VO) in written discourse, as are 109 out of 110 tokens (99%) in spoken discourse; i.e., indefiniteness implicates non-topicality. But again the inverse (implication d) is clearly disconfirmed: out of 1191 non-topical tokens (VO), only 276 (23%) are indefinite in written discourse, and only 109 out of 398 (27%) in spoken discourse, i.e. non-topicality (VO) does not implicate indefiniteness.

Table 1: summary of Sun & Givón's (1985) tables 1 and 2, showing the relation between definiteness and word order. Actual number of occurrences in S&G's quantitative discourse samples is given.

	written discourse		spoken discourse	
	VO	OV	VO	OV
referential indefinite NP	276	3	109	1
definite NP	915	76	289	31

Our reanalysis of S&G's data thus show that L&T are partially right: there is some relation between definiteness and topicality, but that S&G are also partially right: this relation is not one of simple covariance. Finally, the fact that the data strongly support implications (a) and (b), but not (c) and (d), and the fact that most, but not all tokens comply with (a) and (b), were fully predicted from our hypothesis that XV has topic-marking function.

3.3 Continuity:¹⁰ It follows from consequence B of topic function (2.1) that topics will have greater continuity with previous discourse than non-topics. In other words, when an entity is invoked as a topic (XV) at a particular point in the text, it is much more likely to already have been "in use" (by mention or by zero) in the previous, or at least a recent clause, than an entity which is invoked as a non-topic (VX), as depicted in (5):

Givón's (1983) measure of referential distance (RD), used by S&G, a measure of this distance (in clauses) from an NP backwards in the text to the previous mention of the entity, or its evocation through zero-anaphora. Their data, summarized in Table 2, show that in both written and spoken discourse, topical NPs (OV) have a much shorter RD than non-topical NPs (VO); on the average, the RD for VO is mo

than four times as great as for OV, i.e. topical nouns have much greater referential continuity in discourse, as we predict. This contradicts S&G's expectation that OV will be more "discontinuous" than VO, leading them to reformulate their hypothesis in terms of "contrast/emphasis."

Table 2: summary of Sun & Givon's (1985) tables 5 and 6 giving the median¹¹ referential distance for definite objects¹² in preverbal and postverbal position.

	written discourse		spoken discourse	
	VO	OV	VO	OV
unmodified definite nouns	10	3	4.5	2
names	9	4	20	1

3.4 Contrast/emphasis: It follows from consequence D of Topic Function (2.1) and from Topic Identification (2.2) that most of the time, topics in the speaker's knowledge structure do not make it into the text (zero-anaphora). Only when a special reason arises--when one topic is being substituted for another, when a potential competitor arises, when the speaker wishes to emphasize the entity or the event in which it participates--will the topic actually be invoked in the text. This leads to the expectation that most topics invoked in the text, i.e. most nouns in preverbal position, will have some sort of contrastive or emphatic effect associated with them. Postverbal, non-topical nouns may also be contrastive or emphasized, but there is no bias expecting them to be so.

3.41 Givon's (1983) measure of Potential Referential Interference (PRI), also used by S&G, is a measure of weak contrastiveness. It inquires whether, for a given NP in the text, there is another reference in the preceeding three clauses which is "semantically compatible with the predicate of the referent under consideration (S&G, p. 331)," i.e. which could cause confusion for the listener if the referent were not clearly disambiguated. S&G's results are

Table 3: summary of Sun and Givon's (1985) tables 8 and 9 showing the extent to which pre- and postverbal objects have Potential Referential Interference (PRI).

	written discourse		spoken discourse	
	VO	OV	VO	OV
PRI	81	32	23	25
no PRI	789	41	266	6
percent PRI	9%	43%	14%	80%

summarized in Table 3. These data show that preverbal objects in written discourse are often contrastive, and in spoken discourse are contrastive most of the time, while contrast for postverbal objects is infrequent. They thus strongly support our claim that topics, when invoked in the text, should be somehow either difficult for the listener to uniquely retrieve, or emphatic. They equally support S&G's claim that XV is a marking device for contrast/emphasis.

3.42 S&G argue that the text distribution of OV in Mandarin, for example the short RD and the high PRI, closely resembles contrastive structures in other languages, for example OV in Biblical Hebrew, which they go on to compare to Y-movement in English. We have two things to say about this. First, by the data they cite from Fox (1983) in their Table 12, OV in Biblical Hebrew is always contrastive (as measured by PRI), whereas in spoken Mandarin OV is not always contrastive in this sense (80%), and in written Mandarin only about half the time. In other words, Mandarin OV is only sometimes literally contrastive, whereas OV in Biblical Hebrew, and Y-movement in English are always contrast devices.

Secondly, Y-movement in English is not just a contrast device, but is also has TOPIC function in our sense (2.1). Y-movement in text is often followed by repeated "use" of the fronted entity, e.g.

6. "I didn't see Mary there; JOHN I saw right away. He was dancing with George and wearing a really wierd outfit."

In other words, whatever similarity there is between OV in Mandarin and Y-movement in English strengthens our claim that Mandarin OV is a form of topic-marking.

3.43 S&G view their contrast/emphasis category as an aspect of discourse accessibility. Now contrast, to the extent it is measured by PRI, does reflect accessibility in the sense that if a referent has competition in the immediately preceding discourse, it is less uniquely accessible to the listener. But this is not true of emphasis. An entity may be emphasized, and at the same time be uniquely accessible and thus fully clear to the listener. Many of S&G's own examples from spoken discourse bear this out. The following excerpt is from their (22c-e):

7. ...nǐ guāng luójì shàng dǒng le hái bù-xíng; nǐ bǐxū
you only logic on know AM still not-good you must

bǎ nèi dōngxì chītòu, cái zhēnzhèng bǎ dōngxì xué dào shǒu le
OM that stuff eat-well then really OM stuff learn to hand AM

'if you only understood logically, it's still no good; you must understand the stuff thoroughly, only then will you have really learned the stuff'

The "stuff" in question has already been established as topic, and there is no competitor in sight. If the underlined NPs are omitted, no uncertainty whatever arises about what is being referred to. What is lost, however, is emphasis:¹³ and the emphasis is on the events of 'understanding' and 'learning', not on the 'stuff' invoked in preverbal position. This and similar examples in S&G of emphasis associated with OV do not in fact support their implicit claim that OV marks discontinuity in the sense of contrast,¹⁴ since there is no referential ambiguity, but only emphasis. On the other hand, these examples are fully consonant with our TOPIC construct: if the speaker invokes a topic in the text when there is no uncertainty for the listener about its identity, then the listener will infer emphasis on that entity, or somewhere else in the event.¹⁵

3.44 Another discourse example from S&G (their no. 22) shows particularly clearly how OV can link weak contrastiveness with topicality.

8. (context) Zhè yú-piàn zhōu, shì yòng yī-jīn-bàn zhǐ liǎng-jīn de xiān-yú zuò de. 'This sliced-fish stew* is made by using 75 to 100 grams of fresh fish.' (*zhōu = soupy cooked rice)

- a. Xiān qù-diào lín hé nèi-zàng, 'first remove the scales
first go-away scale and internal-organ and internal organs'
- b. jiāng bú dài cì de bùfen qiē chéng báo-piàn, 'cut the bonels part
OM boneless SB part cut become thin-slice into thin slices'
- c. bàn hǎo zuǒ-liào. '(and) mix (it) well (with the)
mix good help-material flavoring (=spices, etc.)
- d. Dài shā-guō lǐ de zhōu áo hǎo hòu, 'after the rice in the
wait earth-pot in SM rice cook good after pot is well cooked'
- e. jiāng yú-piàn fàng rù zhōu lǐ jiǎobàn. 'put the fish slices
OM fish-slice put into rice in stir into the rice and stir'
- f. Zài zhǔ yī-huǐr jiù kě qǐ guō. 'cook (it) a while longer,
again cook 1-while, then may out pot then you may remove the pot'

S&G point to two instances of OV (8b & e) to support their contrast hypothesis, which they point out themselves are only weakly contrastive, presumably in the sense of PRI. But they fail to mention two instances of VO (8a & c) which are equally contrastive in this sense. If Mandarin OV were a direct contrast-marking device, then these objects should also have been fronted.

If on the other hand we rank the five entities in order of prominence, both in terms of frequency of mention in this passage, and of their centrality to the sliced-fish stew recipe, we find that the stew itself and the main ingredient have been accorded OV status, while the lesser ingredients and the waste have been relegated to VO:

OV	{ stew
	{ boneless parts, fish slices
VO	{ flavorings
	{ scales and internal organs

The occurrence of OV in this passage thus shows only a partial correlation with weak contrast, but an intimate correlation with prominence, and with TOPIC in our technical sense: preverbally invoked entities continue to be active in the discourse, while the postverbally invoked ones do not.

4.0 Our TOPIC hypothesis for the positioning of constituents with respect to the verb in Mandarin has three advantages over the definiteness hypothesis of L&T and the contrast hypothesis of S&G.¹⁶ First, it is able to more fully account for the quantitative pattern of discourse data observed by S&G than the other hypotheses. Secondly, it is able to account for emphasis and prominence effects which are not accompanied by contrast in the literal sense of competition with other possible participants. Finally, it provides a unified theoretical account for diverse kinds of message effects--definiteness, referential continuity, contrastiveness, emphasis, prominence--by showing these all to be inferences from one underlying construct. "Definiteness" is not the meaning of OV, but rather an indirect consequence which the listener infers from an entity marked as topic. Similarly, "contrastiveness" and "emphasis" are not the meaning of OV, but rather are inferences from the fact that topics are normally not invoked in the text at all.

Footnotes

1. L&T claim that "Tendency A: nouns preceding the verb tend to be definite, while those following the verb tend to be indefinite (p. 170)," with certain exceptions based on morphological marking and "inherent" or "non-anaphoric" definiteness. S&G claim that their data "seems to demonstrate rather conclusively that L&T's hypotheses, at least with regard to their Tendency A, are not borne out by the facts of the language as actually used (p. 336-7), and again that their data "suggest that it cannot be the case that the VO order in Mandarin codes indefinite objects, while the OV order codes definites (p. 344)." They do hedge this claim, however, with the observation that "the great majority of OV constructions occur with definite objects (p. 344)." This hedge will be crucial in our own analysis.
2. A clear example of closed-text theory is to be found in Halliday and Hasan (1976), who view text cohesion as a relationship among elements of the text. Givon (1983), in discussing the history of research on topicality, points out that "the various strands of this tradition tended to divide sentences (clauses) into two distinct components, one of them the 'focus'..., the other the 'topic'....we tended to incorporate uncritically our predecessors

view of 'topic' as an atomic, discrete entity, a single constituent of the clause (p. 5, emphasis ours)."

We feel that S&G's contrast hypothesis implicates a closed-text theory, since it limits itself methodologically to constituents in the text, rather than taking evoked participants in the reader's constructed text-world (i.e. "zero-anaphora") equally into account. In other respects, Givon's work in general (e.g. 1983, 1984) is a clear example of open-text theory.

3. Chafe (1976) clearly distinguishes the pro- and retroactive aspects of "topic," but does not elaborate. Li and Thompson (1981) elaborate on this (pp. 100-103): retroactively, "one of the functions of topic..is simply to relate the material in the sentence of which it is a part to some preceding sentence." Proactively, "when a speaker wants to contrast two items, s/he places them as the topics of contrasting sentences," and "the topic has priority...in determining the reference of a missing noun phrase in the sentence that follows." Our analysis generalizes on the proactive functions pointed out by L&T, and reanalyses the retroactive "function" as a communicative consequence of proactive function.
4. "Prominent," for example, as measured by the number of links to other parts of the knowledge structure. The relative "prominence" of a chunk of information in a knowledge structure has, surprisingly, been explored much more extensively in the Artificial Intelligence literature than in the psychological or linguistic literature (see, for example, Grosz (1981) and Bullwinkle (1977)). This is a promising buttress for linguistic research, and we plan to link our work on TOPIC in Mandarin to the work on knowledge structures and their relation to "Deictic Centers" in narrative discourse (Bruder et al., 1986) in the Cognitive Science research group at SUNY Buffalo.

As an anticipation of such research, three ways in which a "topical" information chunk might be prominent in a speaker's knowledge structure come to mind. First, a chunk might be permanently prominent, independent of any particular context. Such chunks might be the names of familiar people; familiar time intervals such as morning, afternoon, week, year; and familiar places such as home, work, school, Buffalo, or Berkeley. Secondly, a chunk might be activated when a frame of which it is part is activated. Invoking a restaurant frame, for example, immediately makes the waiter, the food, the check, the bathroom prominent.

Finally, a chunk might be activated when it is imbedded in the (perhaps temporary) knowledge structure from which the speaker constructs a particular discourse. In particular, the chunk would be prominent in proportion to the number of events to which it is linked in the structure. For example, in the structure from which the narrative in (8) was created, "stew" is linked to all the events, and therefore immanently available as a topic domain when constructing the text; "fish slices" is linked to several events,

and also makes a good domain, but the "scales and entrails" are linked only to the event of being removed, and thus do not make a good topic domain.

5. This works for languages such as Mandarin whose structure is extensively responsive to the topical organization of knowledge structures (hence "topic prominent"). English is less obviously organized in this fashion, and needs pronouns to maintain topic continuity.
6. J. Myhill reminded us that these "low information reminders" are often grammatically obligatory. But the speaker can still choose to use them. For example in English the speaker can choose to use ϕ and conjunction reduction as a package, or choose to use a pronoun with no reduction. The grammatical cooccurrence simply pushes the speech-production decision up to a higher constituent level.
7. These remarks are intended to place topic marking in the same domain as the marking of other grammatical information, such as case, aspect, or definiteness. No argument is needed to affirm that a language may have several devices for marking these notions, while another may have none at all, but rather use indirect means for getting the listener to infer them; and furthermore, that languages vary fundamentally in the grammatical means for expressing these notions.

In addition to preverbal position, Mandarin has a set of discourse particles which seem to have topic-marking function (Li & Thompson, 1981, p. 86). Furthermore, topicality may be inferred from a variety of circumstances, the primary one of which is zero anaphora (a zero in the text may be non-topical, but this is rare). If an entity is introduced in a presentative construction, the listener may infer that it is a domain specifier for the following discourse (i.e. will control zero-anaphora), even though it never occurred in postverbal position.

8. In Mandarin discourse only one constituent generally occurs before the verb, if any. Instances in which more than one constituent occurs there include time/place adverbial + NP, instances of SOV and OSV, and the so-called "topic and subject" (Li & Thompson 1981) and "double subject" (Chao, 1968) constructions. We contend that these are all instances of two topic domains being specified in the same clause. An issue of considerable psychological and linguistic interest is the relation of the two topics so specified. We believe that the domain of the initial topic for the following discourse is greater than that of the second topic (i.e. the scope of the second is contained in the first). Facts supporting this hypothesis include: a) temporal/spatial adverbials almost always occur before entity NPs; b) of two entity NPs, the first will control following zero-anaphora more extensively than the second.

9. "Non-referential indefinite" NPs have been left out since these may be either "definite" or "indefinite" in different senses.
10. We hope we are not causing confusion by using "continuity" somewhat differently than Givon (1983) does. He uses it as a cover term for a variety of measures of how uniquely "available" a particular entity is at a given point in the text. We are restricting it to those measures, such as his RD, which focus on how recently and/or how often an entity has been evoked in the previous discourse (c.f. Zubin, 1979, for such continuity measures applied to subjects in German), but not on potential competitors or on thematic support.
11. S&G report both median and mean distances, but consider the median to be more reliable for technical reasons.
12. We do not report S&G's data for pronouns, or definite nouns modified by a demonstrative or a restrictive phrase/clause. These categories showed little or no RD difference, a finding which they link to the extreme positions of these categories on Givon's (1983) scale of topic accessibility.
13. Actually, emphasis is still in the message, carried by the emphatic markers -tòu, cái and zhēnzhèng, by the repetition of nǚ, and by the general structure of the expressed thoughts. The emphatic effect of invoking a topic when the referent is already clear redundantly supports these other sources of emphasis.
14. S&G's argument on this point is hard to follow. They start by giving contrast, measured by PRI, as an aspect of discourse continuity/accessibility. Then they shift to "contrast/emphasis" alone in their summary statements and conclusions.
15. This accords fully with Hinds' (1977) observation that full NPs tend to occur in the clause which is the "pragmatic peak" of a paragraph, while pronouns and zero-anaphora occur in other clauses. Giving more information than necessary seems to be a widespread if not universal strategy of evoking emphasis. Deictic particles like "this" and "that" are used in many languages not only when there is possible ambiguity about reference, but when the speaker wishes to emphasize the event (cf. Kirsner, 1979, for a probing study of this phenomenon in Dutch). The strategy follows directly from Beaugrande's (1980, p. 107) principle of upgrading informativity.
16. One might conclude from our remarks in this paper that we reject S&G's position. The opposite is true. We fully agree with their methodological approach, and with their observations of contrast and emphasis effects. In fact, it is the insight of their approach and the precision of their methodology that enabled us to clarify and support our view of TOPIC, which we regard as an

extension of S&G's and L&T's positions. We hope that our TOPIC hypothesis in turn forces further refinements. The only good hypothesis is one which invites itself to be eaten by the next.

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