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# Word Order and Cognitive Status in Mandarin\*

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A cooperative speaker's selection of a particular form of referring expression depends, in part, on assumptions she makes regarding the addressee's memory of and attention towards the intended referent in the particular context in which the expression is used. Gundel, Hedberg, and Zacharski (1993) propose six cognitive statuses which they claim to be universally relevant for explicating the use of referring expressions in natural language discourse, and provide empirical support from a study of discourse data in English, Mandarin Chinese, Japanese, Russian, and Spanish.

The purpose of this paper is to show that the proposed framework can shed new light on some well-known claims by Li and Thompson (1976, 1981) concerning the encoding of definiteness in Mandarin. I will first review the new framework and the generalizations made about the five languages, and then turn to a consideration of the claims by Li and Thompson shown in (1).

- (1) a. The distal demonstrative determiner in Mandarin is beginning to function like the English definite article.
- b. The numeral meaning 'one' in Mandarin is beginning to function like the English indefinite article.
- c. Definite noun phrases tend to occur in preverbal position in Mandarin, while indefinite noun phrases tend to occur in post-verbal position.

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## 1. Cognitive Status and Referring Forms in English

Gundel, Hedberg, and Zacharski (henceforth ‘GHZ’) propose that there are six cognitive statuses relevant to the form of referring expressions in natural language discourse, and that these cognitive statuses are implicationaly related as shown in the ‘Givenness Hierarchy’ in Figure 1.

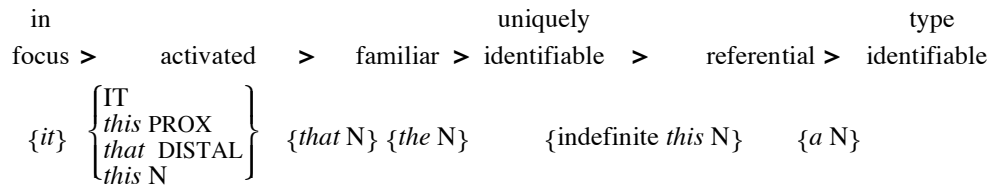


Figure 1. The Givenness Hierarchy: English

Each status on the hierarchy is claimed to be a necessary and sufficient condition for the appropriate use of the pronominal or determiner forms associated immediately below it on the hierarchy. Use of a particular form thus signals that the associated cognitive status is met and, since each status implies all lower statuses (i.e. statuses to the right), it also signals that all lower statuses have been met. For example, any referent which is activated is by definition also familiar and uniquely identifiable; but not all identifiable entities are familiar and not all familiar entities are activated. The statuses are defined as shown in (2).

- (2)
- a. Type Identifiable: The addressee is able to access a representation of the type of object described by the expression.
  - b. Referential: The speaker intends to refer to some particular object or objects.
  - c. Uniquely Identifiable: The addressee can identify the speaker’s intended referent on the basis of the nominal alone.
  - d. Familiar: The addressee can uniquely identify the intended referent on the basis of an existing representation in memory.
  - e. Activated: The referent is represented in current short-term memory.

- f. In Focus: The referent is at the current center of attention.

The English forms with which each status is associated as a necessary as well as sufficient condition can be illustrated with the examples in (3).

- (3) I couldn't sleep last night.
- a. *A dog* kept me awake.
  - b. *This DOG* kept me awake.
  - c. *The dog* kept me awake.
  - d. *That dog* kept me awake.
  - e. *This dog/this/that/IT* kept me awake.
  - f. *It* kept me awake.

In order for the indefinite article phrase in (3a) to be acceptable, it is necessary that the speaker be justified in assuming that the addressee can identify the type of entity referred to, i.e. knows what a dog is. However, for the definite article phrase in (3c) to be acceptable, the speaker must be able to furthermore assume that the addressee can uniquely identify the intended referent, perhaps by means of the inference that the speaker intends to refer to her own dog, given the plausibly-shared assumption that a person will often keep a dog as a pet. Appropriate use of the distal determiner in (3d) requires in addition that the speaker be justified in assuming that the addressee is already familiar with the dog in question, and thus already has a representation of the dog in memory, perhaps long-term memory. The proximal determiner in (3e) imposes the further constraint that the referent be accessible from the current linguistic or extralinguistic discourse context, i.e. that the addressee's representation of the referent be activated.

Since activation entails all lower statuses, an activated entity can be referred to with a definite article phrase if the addressee is able to infer the identity of the intended referent from the assumption that the information encoded by the nominal is relevant and sufficient for identification in the context. A speaker might even use an indefinite article phrase to refer to an activated entity, if it is clear from the context that the activated entity is the only relevant entity of the articulated type, and where it isn't so much the identity of the referent, but the fact that it is a referent of that particular type, which determines the relevance of the reference. For example, (4) could be

appropriately uttered in a context where the speaker and addressee are jointly examining the animal which both of them know to be the speaker's recently acquired first dog.

- (4) I couldn't sleep last night. Even though we have *a dog* now, I still worry about burglars.

Finally, a speaker may use a distal determiner in order to satisfy the (by claim) at least partially independent locational deictic condition on demonstrative expressions which GHZ rather loosely formulate as 'the speaker activation condition': the referent of a proximal demonstrative expression must be activated in the speaker's own context space. This constraint accounts for the distribution of demonstratives in (5)-(6).

- (5) I couldn't sleep last night. *That!/?this dog over there* is the reason.

- (6) Read  $\left\{ \begin{array}{l} \textit{my lips} \\ \textit{?these lips of mine} \\ \textit{???those lips of mine} \end{array} \right\}$ : No New Taxes!

## 2. Cognitive Status and Referring Forms in Five Languages

Based on published grammars, interviews with native speakers and the analysis of a corpus of spoken and written texts, GHZ compared the referring expression systems of English with those of Mandarin Chinese, Japanese, Russian and Spanish, by constructing Givenness Hierarchies for each language, as shown in Figure 2 for Mandarin and Figure 3 for Japanese.

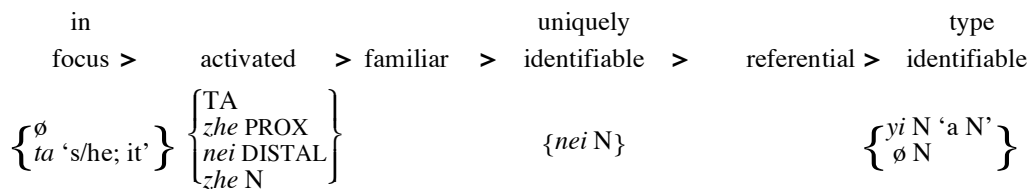


Figure 2. The Givenness Hierarchy: Mandarin

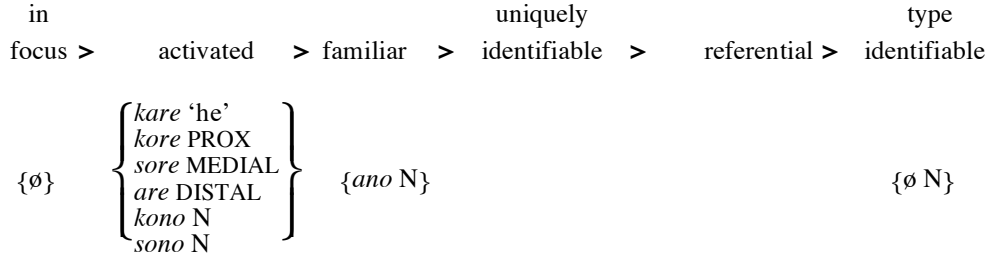


Figure 3. The Givenness Hierarchy: Japanese

According to GHZ, the five languages differ with regard to the inventory of reference forms that are available to speakers, as summarized in (7):

- (7) a. English lacks zero-pronominals.
- b. Japanese and Spanish make a three-way, rather than a two-way proximity distinction in the demonstrative system.
- c. Chinese, Japanese and Russian lack definite articles.
- d. Only English has a form (indefinite *this*) which specifically signals referentiality.
- e. Japanese and Russian lack not only indefinite articles but also non-numeric uses of numeral 'one' phrases.

The languages also differ with regard to the way that forms of particular types map onto particular cognitive statuses, as summarized in (8).

- (8) a. Japanese lacks forms corresponding to the unstressed pronouns of other languages.
- b. The medial demonstrative determiner *sono* in Japanese requires activation, whereas the medial demonstrative determiner *ese* in Spanish requires only familiarity.
- c. The proximal demonstrative determine *éto* in Russian requires only familiarity.
- d. The distal demonstrative determiner *nei* in Chinese requires only unique identifiability.

The claims made by GHZ about Mandarin Chinese are summarized in (9). This paper will discuss only (b) and (c).

- (9) a. Unstressed as opposed to zero pronominals and determiners, are used relatively more frequently in Mandarin discourse than in Japanese, Russian, and Spanish.
- b. Mandarin distal demonstrative expressions can be used to refer to uniquely identifiable but unfamiliar entities, and this is consistent with the claim (Li and Thompson 1975, 1981) that the distal demonstrative determiner is beginning to function like a definite article in Mandarin.
- c. Proximal demonstrative expressions are used more frequently in Mandarin than in Japanese discourse, and even more frequently than in English, Russian and Spanish; and this discourse distribution would be consistent with a claim that both proximal and distal determiners are beginning to function like definite articles, with the proximal form predominating for referents which are at least activated.
- d. Numeral ‘one’ phrases are frequently used referentially but they can also be used nonreferentially, and this supports Li and Thompson’s further claim that *yi* ‘one’ is beginning to function like an indefinite article in Mandarin.
- e. Mandarin, like Russian, lacks the speaker activation condition on proximal demonstratives.

### 3. Uniquely Identifiable *nèi* N

I will first look at the peculiar behavior of the distal determiner *nei* and relate it to the claim made by Li and Thompson concerning the development of a definite article in Mandarin. Li and Thompson (1981) assert that the sentence in (10), which contains distal *nei* can be translated not only as ‘do you know that person?’ but also as ‘do you know the person?’.<sup>1</sup>

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<sup>1</sup>The following abbreviations are used in the glosses:

ACC	accusative case	GEN	genitive case
ATT	attributive particle	NOM	nominative case
ASP	aspect particle	INTER	interrogative complementizer
CLS	classifier	RES	result particle
COMP	complementizer	TOP	topic marker
DAT	dative case		

- (10) Ni renshi bu renshi *nei ge ren*  
 you know not know that CLS person  
 ‘Do you know the/that person?’

The problem with this argument from the perspective of the Givenness Hierarchy is that any distal determiner phrase in any of the languages studied should be translatable by a definite determiner in English given an appropriate context, since any referent which meets the familiarity condition on distal determiners by definition also meets the unique identifiability condition on definite determiners. Thus, it isn't clear that the Mandarin demonstrative in (10) is not simply the translation equivalent of the English distal determiner instead of the definite article proper.

Furthermore, since there is not enough information encoded in the noun phrase in (10) to enable an addressee to identify the referent on the basis of the nominal alone or even to access a representation of a particular referent of the appropriate type from long-term memory, the referent would need to be activated in the current discourse context in order for reference to succeed. Activation would again automatically satisfy the familiarity condition on the use of English determiner *that*.

Li and Thompson (1975) give the potentially more promising example shown in (11) to illustrate the same claim.

- (11) wo diu le de nei ben shu  
 I lose ASP ATT that CLS book  
 ‘the book I lost’

Their argument is simply that ‘in relative clauses, the demonstrative article *nei* may serve as the definite article.’ Although here the relative clause provides information supplementary to that provided by the head noun alone, the information encoded in the noun phrase is still insufficient to enable the addressee to identify the referent without prior familiarity. Again the referent would need to be familiar for reference to actually succeed. Since necessary conditions for use of a distal demonstrative in English are met, once again *nei* may simply be the translation counterpart of English *that* instead of *the*.

What is needed is an example of a noun phrase which contains enough information to enable the addressee to identify the referent on the basis of the nominal alone and which also contains the determiner *nei*. A distal determiner in a noun phrase with a uniquely identifiable but unfamiliar referent could indeed be concluded to function like the English definite article. GHZ provide such an example, as shown in (12).



## (12) Mandarin

Zuotian wanshang wo shui bu zhao  
 yesterday evening I sleep not achieve

*Gebi de nei tiao gou jiaode lihai*  
 next.door ATT that CLS dog bark RES terribly

‘I couldn’t sleep last night. The dog next door was barking.’

The native speakers consulted agreed that the distal demonstrative phrase in (12) can be used even when the speaker knows that the addressee is not familiar with the dog in question.

The distal determiner in Japanese, like the distal determiner in English, lacks this flexibility. Native speaker consultants agreed that (13) would only succeed if the addressee did have prior familiarity with the dog:

## (13) Japanese

Kinoo wa hitobanjuu nemurenakatta  
 yesterday TOP all.night couldn’t.sleep

*tonari no ie no ano inu no sei da*  
 neighbor GEN house GEN that dog GEN reason is

‘I couldn’t sleep last night. That dog next door is the reason.’

Determiner *nei* can indeed be concluded to have one of the functions of the definite article proper. Li and Thompson’s general observation is thus supported.

#### 4. Activated *zhè* N

A second respect in which Mandarin demonstrative determiners function like English definite articles involves the proximal rather than the distal determiner, and the sufficient rather than necessary conditions on its use. To show this, it is necessary to examine the textual distribution of form tokens that access referents with particular cognitive statuses. I will discuss the distribution of forms and statuses in one narrative film description for each of the three

languages.<sup>2</sup> The subjects had seen a film without words about a goldfish, a boy, a cat and a bird and then were instructed to describe the film they had just seen to a person who had not seen the film. The data are maximally comparable because the speakers of the different languages saw exactly the same film. The distribution of forms coding each cognitive status for the three stories are shown in Tables 2-4 below.

*Table 2. Distribution of Forms According to Highest Status of Referent: English*

	In Focus	Activated	Familiar	Unique	Referen.	Type	Totals (%)
<i>it</i>	48						48 (36.1)
<i>IT</i>		1					1 (0.75)
<i>this</i>							
<i>that</i>		1					1 (0.75)
<i>this N</i>		2					2 (1.5)
<i>that N</i>		4	1				5 (3.75)
<i>the N</i>	6	25	9	18			58 (43.6)
indefinite							
<i>this N</i>					1		1 (0.75)
<i>a N</i>					10	7	17 (12.8)
Totals	54	33	10	18	11	7	133
(%)	(40.6)	(24.8)	(7.5)	(13.5)	(8.3)	(5.3)	(100%)

It is clear from Table 2 that the overwhelming majority of full noun phrase references in the English story were made with a definite article (43.6% of the total references in the story), and very few references were made with a demonstrative determiner (5.25%). Definite article phrases occur for all cognitive statuses equal to or higher than uniquely identifiable.<sup>3</sup>

The distribution of forms in the Mandarin story is quite different from the English. Table 3 shows two full noun phrase forms with a large proportion of uses: 36.3% of total references were made using bare nominal phrases and 22.3% were made using proximal demonstrative determiners. Bare nominal phrases occur with all cognitive statuses.

Japanese is an intermediate case, with 61.1% of total references coded with bare nominal phrases and 13% coded with medial demonstrative

<sup>2</sup>In order to compare particular tokens of Mandarin, Japanese, and English used to accessing the same referents, discussion will be confined to a proper subset of the data analyzed by GHZ.

<sup>3</sup>Goldfish story referents were coded as familiar if they had not been evoked for at least one episode in the story.

determiners, as shown in Table 4. Bare nominal phrases are again used to access referents with all cognitive statuses.

*Table 3. Distribution of Forms According to Highest Status of Referent: Mandarin*

	In Focus	Activated	Familiar	Unique	Referen.	Type	Totals (%)
$\emptyset$	19						19 (12.1)
<i>ta</i>	29	1					30 (19.1)
<i>zhe</i>		1					1 (0.6)
<i>nei</i>							
<i>zhe</i> N	12	22	1				35 (22.3)
<i>nei</i> N	1		1				2 (1.3)
<i>yi</i> N					13		13 (8.3)
$\emptyset$ N	8	9	15	14	3	9	58 (36.3)
Totals	69	33	17	14	16	9	158
(%)	(43.9)	(21.0)	(10.8)	(8.9)	(10.2)	(5.7)	(100%)

*Table 4. Distribution of Forms According to Highest Status of Referent: Japanese*

	In Focus	Activated	Familiar	Unique	Referen.	Type	Totals (%)
$\emptyset$	41						41 (21.3)
<i>kare</i>	4						4 (2.1)
<i>kore</i>	1	1					2 (1.0)
<i>sore</i>		1					1 (0.5)
<i>are</i>							
<i>kono</i> N	1						1 (0.5)
<i>sono</i> N	12	12	1				25 (13.0)
<i>ano</i> N			1				1 (0.5)
$\emptyset$ N	9	20	11	38	23	17	118 (61.1)
Totals	68	34	13	38	23	17	193
(%)	(35.2)	(17.6)	(6.8)	(19.7)	(11.9)	(8.8)	(100%)

Table 5 shows the percentage of full definite noun phrases of the various forms, those whose referents had a cognitive status of uniquely identifiable or higher.

Table 5. Distribution of Full Definite NP's According to Form of Determiner: Summary

	Demonstrative Determiner N	Definite Determiner N	Definite Bare N	Total Definite Full NP	Total Referring Expressions
English	7 (5%)	58 (44%)	-----	65 (49%)	133 (100%)
Japanese	27 (14%)	-----	78 (40%)	105 (54%)	193 (100%)
Mandarin	37 (24%)	-----	45 (28%)	82 (52%)	158 (100%)

The second column from the right shows that the proportion of such references is roughly comparable in the three stories: 49% of the English, 54% of the Japanese and 52% of the Mandarin total references were made with full definite noun phrases. What stands out most clearly on this chart is again the high percentage of total references in Mandarin made with demonstrative determiners: 24%. This contrasts sharply with the English 5%.

Although Japanese has 14% of total references coded with demonstrative determiners, this percentage goes down to 10% when eight forms which obligatorily contain *sono* are removed. These medial determiners are used to mark discourse-oriented relational nouns such as *sono mae ni* 'before that' (literally, 'at that front') and *sono ato de* 'after that'. Since the other two languages do not use demonstrative determiners to specify location in this way, these tokens should perhaps not be included in the comparison.<sup>4</sup> An example containing two such uses is shown in (14).

- (14) *suisoo no naka ni takusan no kingyo ga ite*  
 fishbowl GEN inside at many GEN goldfish NOM be  
 'There are a lot of goldfish in a fishbowl'

*sorede sono naka ni eeto hotondo ga kuroi kingyo nanda*  
 then that inside at well almost.all NOM black goldfish be  
 'Among them almost all are black goldfish.'

*kedo sono naka ni ippiki dake akai kirei kingyo ga ite*  
 but that inside at one only red pretty goldfish NOM be  
 'But among them there is only one pretty red goldfish.'

We can conclude from Table 5 that Mandarin does indeed exhibit an unusually high proportion of references made with demonstrative determiner

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<sup>4</sup>If demonstrative-marked relational nouns are counted as pronominal rather than full noun phrases, there are only 97 definite full NP's in the Japanese story, 50% of the 193 total referring expressions.

expressions. In attempting to discover why this should be the case, I examined each of the demonstrative determiners in the Mandarin story and looked to see what the speakers of the other two languages did in the same context. A typical example is shown in (15)-(17).

- (15) All the while *the cat* now, which had gotten in,  
 didn't seem to notice *the fish*,  
 which was laying out of *the bowl*,  
 but was trying to get through, *the cat*, at *the bird*.

(16) *Mandarin*

Suoyi *hei mao* jinlai de shihou,  
 so black cat enter ATT time

*zhei zhi jinyu* qiaqiao shi zai *zhoumian* shang.  
 this CLS goldfish happen be at table on

Keshi *hei mao* mei you faxian *zhei zhi jinyu*,  
 but black cat not have notice this CLS goldfish

yushi Ø jiu xiang chi *nei ge niao*.  
 since then think eat that CLS bird

'So when [the] black cat came in, this goldfish happened to be on [the] table, but [the] black cat didn't notice this fish since [he] was thinking of eating that bird.'

(17) *Japanese*

Sorekara *neko ga* haitte kite. Sorede hajime ni  
 then cat NOM enter come then first DAT

Ø Ø *kingyo ni* kigatsuku ka to omottara  
 fish DAT notice INTER COMP thought

Ø saki ni *kotori no* *hoo* o mite.  
 first DAT bird GEN direction ACC look

'And then [the] cat comes in. At first [I] thought [he] would notice [the] goldfish. But [he] first looks in [the] bird's direction.'

The English passage contains only definite article full noun phrases, the Chinese passage contains bare nominals and demonstrative determiners, and

the Japanese passage contains bare nominals only. About half the proximal determiner phrases in the Mandarin story occurred in contexts similar to the second reference to this fish in (16). In these cases the Mandarin speaker used proximal determiners to refer to important activated entities. The expressions occur in postverbal position because they encode part of the sentence's comment. The English speaker used the definite article in these contexts and the Japanese speaker used the bare nominal.

Given that Mandarin and Japanese both lack definite articles, why is there such a great difference between Mandarin and Japanese? I suggest that this is due to the correlation in Mandarin between word order and definiteness. Li and Thompson's 1975 claims with regard to definiteness and word are summarized in (18).

(18) Tendency A: Nouns preceding the verb tend to be definite, while those following the verb tend to be indefinite.

Refinement 1: The noun in post-verbal position will be interpreted as indefinite unless it is morphologically or inherently or non-anaphorically definite.

Refinement 2: A sentence-initial noun must be interpreted as definite, and may not be interpreted as indefinite even if it is preceded by the numeral *yi*- 'one'

Refinement 3: The noun following *bei*, although pre-verbal, is immune to Tendency A.

Refinement 4: Nouns in prepositional phrases are immune to Tendency A.

Tendency B: Mandarin is presently undergoing a word order shift from SVO to SOV.

Refinement 1 is the crucial generalization: the noun in postverbal position will be interpreted as indefinite unless it is morphologically marked by a demonstrative determiner, denotes an inherently unique referent, or denotes an entity inferrable from an activated referent by means of a bridging inference. Since the noun phrases at issue here are noninherently and anaphorically definite, Li and Thompson predict that a bare nominal would not be used. Speakers must morphologically mark such noun phrases with a demonstrative determiner to block an implicature of indefiniteness.

Because Japanese doesn't exhibit this interaction between definiteness and word order, Japanese speakers are free to use bare nominal expressions. In accordance with Grice's (1975) second Maxim of Quantity ("Do not give more information than required for current purposes of the exchange"), speakers of all three languages, then, use the weakest possible form which does not implicate a nonactivated referent. This form is the definite article in English, the bare nominal in Japanese, but the proximal demonstrative determiner in Mandarin for postverbal NP's. This, then, is the second respect in which Mandarin demonstrative phrases function like English definite articles.

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