Predemonstrative Modifiers in Mandarin

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1. Introduction

The Mandarin demonstrative phrases (1) and (2) differ minimally in string order. The modifier *huangse-de* 'yellow' follows the demonstrative determiner in (1) and precedes it in (2). The phrases differ significantly in their presuppositions, however. As I show in Section 3, (2) presupposes that the universe of discourse contains only one yellow dog (Chao 1968, Wu 1994). (1), on the other hand, may be felicitous in a universe of many yellow dogs, providing that the speaker manages to direct the hearer’s attention to a subset of the universe in which there is only one—by pointing, for example. I reflect this difference in the choice of English glosses. (2) has the broad, domain-general uniqueness presupposition of the English definite. The cardinality presupposition of (1) is relativized by context, as is typical of English demonstrative phrases as well.

(1) nei-zhi huangse-de gou
\begin{flushright}
DEM-CLS yellow-DE \textsuperscript{3} dog
\end{flushright}

‘that yellow dog’

(2) huangse-de nei-zhi gou
\begin{flushright}
yellow-DE DEM-CLS dog
\end{flushright}

‘the yellow dog’

The goal of this paper is to derive these differences in meaning compositionally from those in string order, without attributing to constructions like

\textsuperscript{1} Portions of this work were presented at CLS 34 (Chicago, April 1998), and may be included in its proceedings. A reduced version is also in review for the proceedings of On the Formal Way to Chinese Languages (Irvine, December 1997).

\textsuperscript{2} Thanks go to Robin Clark for his patient help; to Tony Kroch, Ellen Prince and Audrey Li for early comments; to Chunghye Han and Rajesh Bhatt for discussion; to Yuan Xiao, Minmin Liang, Fudong Chiou, Yuan Sun and again Audrey Li for judgments; and to the reviewers and editors of this series. The mistakes are mine.

\textsuperscript{3} ‘CLS’ stands for ‘classifier.’ The particle \textit{de} intercedes between modifiers and the noun modified. Other grammatical morphemes that will not be glossed are the c-verb \textit{ba}, the perfective \textit{le} and the sentence final pragmatic particle \textit{le}.

(2) any semantic or pragmatic characteristics not robustly evidenced in natural
data. I argue in Section 4 that previous interpretations of the contrast between
(1) and (2) (Chao 1968, Huang 1983, Wu 1994, inter alia) have failed to do this.

My explanation arises from a simple observation: demonstratives have a
characteristic sensitivity to context. Apparently, the demonstrative determiner
denotes a function not saturated by the common noun phrase (NBAR) to its
right alone. We can assume it includes a variable not instantiated by NBAR,
typically left open to context. I demonstrate in 5.1 that, when there is a pre-
demonstrative modifier, it instantiates exactly this context variable. Phrases
like (2) are thereby shut off to context, and acquire a broad uniqueness pre-
supposition. 5.2 formalizes these ideas, and 5.4 discusses the syntax of the
formalization. The resultant theory is attractively minimal: it invokes no
machinery not forced by the semantics of demonstratives generally. It is also
elegantly compositional, something no previous theory can comfortably
claim to be. Moreover, its central claim—that the semantic context variable
of demonstratives is realized syntactically in Mandarin—proves stimulating
from a general theoretical perspective. Finally, the theory has promising ex-
tensions. In Section 6, I sketch a projection of the theory to certain sentential
topic constructions, thereby unifying our understanding of the mapping be-
tween syntax and semantics in Mandarin. Finally, I suggest a generalization
of the account to handle indefinites with predeterminer modifiers.

2. Descriptive Conventions

The basic Mandarin demonstrative phrase has the form DEM + NUMERAL +
CLASSIFIER + NBAR. NBAR terminates with the head noun at the right edge,
and may include a sequence of preceding modifiers following the determiner.
The category 'modifier' includes adjectives, relative clauses, and prepositional
phrases, as well as possessive and locative noun phrases. When NUMERAL is
not overtly present, it is understood that NUMERAL=1. (The determiner nei in
(1) and (2) was originally a contraction of na 'that' and yi 'one'.) I will refer
to the substring DEM-NUMERAL-CLASSIFIER as DEM_n, where the subscript
indicates the value of NUMERAL. DEM_n, I assume, names a function taking
NBAR as an argument. (1) is a typical demonstrative phrase. For (1),
DEM_1=nei zhi 'that (one)' and NBAR=huang-de gou 'yellow dog.' Such
phrases, where no modifier precedes the determiner, I will call DemPs.

(2) exemplifies a variant type of demonstrative phrase, wherein a modi-
fier does precede the determiner. Schematically: MOD + DEM + NUMERAL +
**PreDemonstrative Modifiers in Mandarin**

In this structure as in the canonical structure, NBAR may still include further modifiers, but I will only designate a predeemonstrative modifier as MOD. Thus in (2) MOD=huang-de ‘yellow,’ DEM₁=nei zhi ‘that (one)’ and NBAR=gou ‘dog.’ Demonstrative phrases with an initial modifier, like (2), I will call MDemPs. (3)-(5) are further examples of MDemPs.

(3) gebi-de nei-zhi gou
    neighboring-DE DEM₁ dog
    ‘the dog next door’
    (from Gundel et al. 1993)

(4) wo yuanlai ding-de nei-ge piao
    I originally book -DE DEM₁ ticket
    ‘the ticket I originally booked’
    (Callhome Mandarin, 1430)

(5) shangci shuicao huaile, ba ta xiuhao de nei-ge jiahuo
    last-time sink broke BA he fix -DE DEM₁ fellow
    ‘The guy who fixed my sink last time it broke.’

I motivate these glosses in Section 3.

One basic semantical assumption must be put forward immediately. In this paper, I take predemonstrative MOD, like NBAR, to denote uniformly in <e,t>; that is, to denote a first-order one-place predicate. Hence I should have to include in my semantics a rule which composes modifiers and common nouns by set-intersection, in addition to the rule of functional application (as in Heim & Kratzer 1998, e.g.). This assumption will not always be unproblematic, but it is defensible. I briefly address some problems in Section 5.3.

### 3. Describing the Differences between (1) and (2)

#### 3.1. DemPs Have a Relative Cardinality Presupposition

Dem(onstrative-)phrases have a characteristic openness to context. They range only over a subset of the available discourse referents, where the restriction to that subset is effected by some feature of the utterance situation (Kaplan 1977). Blunt examples show the domain restricted by a pointing finger or a directed gaze. This restriction can be strictly local to each individ-
ual dem-phrase. Uttering (6), I may wave first towards the fountain and then
towards the tree, thereby designating distinct local domains with respect to
which each dem-phrase is evaluated.

(6) That yellow dog and that yellow dog should be kept separate.

Contrast definite descriptions. (7), in the general case, is bad.4

(7) # The yellow dog and the yellow dog should be kept separate.

Presumably, when (7) is bad, it is so because the uniqueness presupposition
of each description must be cashed against the same set of referents, and this
is impossible, since there can only be a unique yellow dog in that set once.
Call this set, with respect to which the presuppositions of a definite descrip­
tion are resolved, U, for universe of discourse.5

We can now state the presuppositions of a dem-phrase more clearly. A
dem-phrase does carry a cardinality presupposition (an assumption that pre­
cisely N members of some domain have some property), much as a definite
description does. But, while the presupposition of a description is evaluated
against all of U, that of a dem-phrase is relativized to a subset thereof, where
restriction to that subset is effected by context. Thus the first conjunct of (6)
presupposes a unique yellow dog, but only in the set of things by the foun­
tain. Equivalently, we could say it presupposes a unique dog by the fountain
in U. (I will switch between these two ways of speaking casually, as for cur­
rent purposes they are logically interchangeable.) Either way, reference fails if
the fountain is patrolled by any more or less than one yellow dog. For ease
of reference, call the contextually defined subset of U over which a dem­
phrase Dx ranges U/Dx, and call a cardinality presupposition which is rela­
tivized to a subset of U a relative cardinality presupposition.

Mandarin DemPs like (1) typically behave like English dem-phrases.
Consider (8), wherein two tokens of the DemP are conjoined.

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4 I am idealizing. As pointed out in Westerståhl 1989, sentences like The linguist
voted for a linguist can be felicitous—e.g., when it is known that the electorate
and the candidate pool each contain one linguist. What is important here for pres­
ent expository purposes is the general contrast between (6) and (7).
5 The universe may be affected as discourse (and semantic evaluation) proceeds,
but, at least within a single coherent monologue, only monotonically.
(8) nei-zhi huangse-de gou he nei-zhi huangse-de gou
DEM₁ yellow-DE dog and DEM₁ yellow-DE dog
(points towards the tree) (points towards the fountain)
dou tai ke'ai le.
both too cute LE
'That yellow dog and that yellow dog are just too cute.'

In (8), the first DemP ranges over that subset of entities in U which are by
the tree (U/D₁={x | x is by the tree}). It is felicitous only if by the tree there
is exactly one yellow dog. A crowd of yellow dogs by the tree, and reference
will fail. The second DemP ranges over U/D₂={y | y is by the fountain}. It is
felicitous only if by the fountain there is one yellow dog, and no more.

The felicity condition on the use of DemPs is consequently as in (9), or
equivalently as in (10). The same conditions hold for English dem-phrases.

(9) A DemP is felicitous only if:
in U/D ⊆ U, \( \lceil [I \text{NBAR I}] \rceil = \text{NUMERAL}. \)

(10) A DemP is felicitous only if:
\( \lceil U/D \cap [I \text{NBAR I}] \rceil = \text{NUMERAL}. \)

In the case of (1), this means: \( \lceil U/D \cap ([I \text{yellow I}] \cap [I \text{dog I}]) \rceil = 1. \)

3.2. MDemPs Have a Universal Cardinality Presupposition

The cardinality presupposition of an MDemP, like that of an English definite
description, is \textit{universal}. That is, an MDemP refers felicitously only if U in
its entirety contains exactly \text{NUMERAL} (=n) things satisfying MOD and
NBAR, as argued in Wu 1994 and first suggested in Chao 1968.

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6 Notice that this predicate itself contains a referential term \textit{(the tree)} which will
not denote uniquely without indexical specification. For discussion of the logical
problems surrounding the semantic 'completion' of referential terms see Soames
1986, and the references therein.

7 \( \lceil X I \rceil \) will mean the semantic evaluation of X: \( \lceil \text{yellow I} \rceil \) is the set of yellow
things in U. I will not distinguish between X and the translation of X: \text{yellow}
stands for either an English word, or the function \( \lambda x.\text{yellow}(x) \). Context should
disambiguate.
(11) An MDemP in S is felicitous only if, in U:

$$| [l \text{ MOD } l] \cap [l \text{ NBAR } l] | = \text{NUMERAL}. $$

In (2), NUMERAL=1, MOD=‘yellow’, and NBAR=‘dog’. (2) works out only if, in U, $$| [l \text{ yellow } l] \cap [l \text{ dog } l] | = 1. $$ In other words, only if U contains exactly one yellow dog.

I take these conclusions to follow from (12) and (13). In both sentences, the first noun phrase is the MDemP (2).

(12) # huangse-de nei-zhi gou he huangse-de nei-zhi gou
yellow-DE DEM$_1$ dog and yellow-DE DEM$_1$ dog
dou tai ke’ai le
both too cute LE

# ‘The yellow dog and the yellow dog are just too cute.’

(13) # huangse-de nei-zhi gou he nei-zhi huangse-de gou
yellow-DE DEM$_1$ dog and DEM$_1$ yellow-DE dog
dou tai ke’ai le
both too cute LE

# ‘The yellow dog and that yellow dog are just too cute.’

The first conjunct in (12) and (13) refers to a yellow dog. In neither case can it be followed, without perversity, by a noun phrase referring to a second yellow dog. The English definite description the yellow dog imposes the same requirement, as demonstrated by the parallel infelicity of the glosses. The infelicity of the Mandarin sentences can be explained just as we would that of their glosses. If MDemPs carry the presupposition given in (11), then (2) presupposes a unique yellow dog in U, and therefore cannot innocently be followed by mention of a second yellow dog. I conclude that MDemPs carry a universal cardinality presupposition. When NUMERAL=1, the MDemP has a universal uniqueness presupposition.

Prosodic emphasis and ostensive gestures will not cancel the presupposition of the MDemP. Speakers judge (14) infelicitous, like (12), despite stress on either or both of the medial determiners, and even if each conjunct is accompanied by the kind of pointing gestures that make (8) felicitous.
(14) # huangse-de NEI-zhi gou he huangse-de NEI-zhi gou
    yellow-DE DEM₁ dog and yellow-DE DEM₁ dog
dou tai ke’ai le
    both too cute LE
# ‘THE yellow dog and THE yellow dog are just too cute.’

Things may improve slightly—judgments are obscure—if the second NP is a
very strongly stressed DemP. (15) is (8) with stress on the second conjunct.

(15) ?? huangse-de nei-zhi gou he NEI-zhi huangse-de gou
    yellow-DE DEM₁ dog and DEM₁ yellow-DE dog
dou tai ke’ai le
    both too cute LE
?? ‘The yellow dog and THAT yellow dog are just too cute.’

However, that (15) is not atrocious in either language does not mean that
huangse-de nei-zhi gou and the yellow dog do not presuppose a unique yellow
dog. It simply shows that listeners are willing to accommodate updates to
and corrections of what had been presupposed at the outset. Emphatic stress
in (15) signals precisely an update of—an addition to—the domain, at that
point in the discourse. Similar updates can be performed as in (16).

(16) The white cat and this other white cat slept on my chest.

The mitigated infelicity of (15) no more argues against (11), therefore, than it
destroyes our understanding of definite descriptions. What it demonstrates
clearly is just that no diagnostic for presuppositions can be ideal, given our
indulgent capacity for accommodation.

Thus (11) remains a well supported hypothesis: MDemPs have the uni-
versal cardinality presupposition of a definite description.

It should be noted that unlike descriptions, MDemPs cannot be used at-
tributively. Both MDemPs and DemPs have only directly referential readings
(Donnellan 1966, Kaplan 1977, Kripke 1977). The subjects of (17) and (18)
will contribute a particular individual to the propositional content. These
sentences say about some particular linguistics teacher, indicated upon utter-
ance, that he is always drunk. They cannot mean that, always, any person
who teaches linguistics is drunk. The same is true for (19). But (20) can have
this latter, attributive meaning.
nei-ge yuyanxi-de laoshi zong shi zui-de DEM₁ linguistics-DE teacher always is drunk ‘That linguistics teacher is always drunk.’

yuyanxi-de nei-ge laoshi zong shi zui-de linguistics-DE DEM₁ teacher always is drunk ‘The linguistics teacher is always drunk.’ (on the referential reading.)

That linguistics teacher is always drunk.

The linguistics teacher is always drunk.

3.3. The Discourse-Pragmatics of MDemPs

Williams 1997 gives a foundation for an objective pragmatic theory of MDemPs. The purpose of this study was to determine the discourse conditions in which MDemPs are used, and to compare these to those of bare NBAR definites (BNDs), like (21).

huangse-de gou yellow-DE dog ‘the yellow dog’

The comparison was to BNDs, not DemPs, since BNDs carry a universal cardinality presupposition; their contribution to truth-conditional meaning thus differs minimally from that of MDemPs. Given this, the question arises, in what situations is an MDemP used, rather than the semantically very similar BND?

Roughly four hours of free conversation, text and sound, between (twenty-three) pairs of native Mandarin speakers were studied. The source was the Linguistic Data Consortium’s Callhome Mandarin corpus. MDemP and BND tokens were coded in accord with a taxonomy of “information status” adapted from Prince 1992. Relevant here is whether a token referred to an entity that: (a) had been mentioned in already in the discourse; or (b) had not been mentioned already, but whose existence was plausibly inferrable from the existence of other entities in the discourse model; or (c) had not been

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8 In some contexts, a bare NBAR string is indefinite or generic. The study was concerned only with non-generic bare NBAR definite descriptions.
mentioned before, and was not inferrable. Call tokens referring to entities with property (a) \textit{D-Old}, with property (b) \textit{Inferrable}, and with property (c) \textit{D-New}. I was strict with what counted as \textit{Inferrable}. Schools generally have principals, and babies have mothers, but much more elaborate guesswork did not constitute a plausible inference, in my estimation.

The study shows that MDemPs are nearly always make the first explicit mention of the referent (90.5\%), and are D-new fully 71.4\% of the time. In extreme contrast, only 13.3\% of BNDs are D-New. The remainder are split almost equally between D-Old and Inferrable. The discourse functions of these noun phrase types thus differ massively, despite their very similar semantics.

<table>
<thead>
<tr>
<th>Discourse Status</th>
<th>MDemPs</th>
<th>BNDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{D-Old}</td>
<td>9.5%</td>
<td>40.7%</td>
</tr>
<tr>
<td>\textit{Inferrable}</td>
<td>19.1%</td>
<td>46.0%</td>
</tr>
<tr>
<td>\textit{D-New}</td>
<td>71.4%</td>
<td>13.3%</td>
</tr>
</tbody>
</table>

This discovery that MDemPs canonically introduce novel referents allows us to reduce our reliance on vague intuitions about when MDemPs are appropriately used. I suggest below that it may also explain why these have often been felt to be contrastive constructions.

The scope of the study did not include DemPs. In doing the research, however, it was apparent that DemPs were D-Old far more often than MDemPs were. DemPs seem to require a higher degree of salience in their referents—roughly as English demonstrative phrases require a more salient referent than definite descriptions (Gundel et al. 1993). Like its gloss ('the dog next door'), (3) can be used felicitously even if the hearer had no idea that my neighbors had a dog, as long a he finds the presupposition easy to accommodate. The DemP counterpart of (3), however—which I would gloss as \textit{that dog next door}—is not felicitous in the same conditions. It requires antecedent knowledge of that particular dog.

4. Previous Accounts

Chao (1968) offered two enduring characterizations of MDemPs. He suggested (a) that pre-demonstrative modifiers correspond to \textit{contrastively stressed} internal modifiers, and (b) that the pre-demonstrative modifiers have \textit{restrictive} readings, while internal modifiers do not, and. The first suggestion
is developed by Mary Wu (1994), and the second by C.-T. James Huang (1983) and Chu-Ren Huang (1987). In this section I show that neither position accords with the facts of MDemP usage. The restrictivity theory, moreover, has no account of the presuppositional differences between MDemPs and DemPs. I go on to reject as theoretically undesirable an analysis which treats the demonstrative deteminer as ambiguous. Finally, before presenting my analysis in Section 5, I note the error in supposing that a relation of coreference obtains between the DEM+NBAR and a null-headed DP constituted by MOD.

4.1. Predemonstrative Modifiers as Contrastive

Chao (1968: 286) proposes that the DemP (22), with contrastive stress on the post-demonstrative modifier, has the same “sense” as the MDemP in (23).

(22) nei-wei DAI YANJING -de xiansheng
DEM₁ wear glasses -DE gentleman
Lit. ‘that gentleman WEARING GLASSES’

(23) dai yanjing -de nei-wei xiansheng
wear glasses -DE DEM₁ gentleman
Lit. ‘wearing glasses that gentleman’

Wu 1994 sees in this analogy a possible explanation for the universal cardinality presupposition of MDemPs, since contrastively stressing a modifier implies that no individual in the relevant context but the intended referent has the property expressed by that modifier.

Given that individuation does not entail rhetorical contrast, Wu’s claim will be cogent only if a persuasive majority of MDemPs are in fact used contrastively. The corpus study mentioned above shows that this is not the case. Of the 84 unambiguous MDemP tokens I gathered, only two were convincingly contrastive in context, and just three more were arguably so. (I cannot include the corroborating data here, since it consists of very long segments of discourse, which make their point only in large numbers.) Plainly, MDemPs are not inherently or even typically contrastive constructions. These findings do actually accord with intuition. Recall examples (3) and (5). These do not generally evoke a contrast with the dogs who don’t live next door or the guys who did not fix my sink last time. Contrast with non-dog things next door or
with guys who fixed a non-sink last time (and so on) is no more likely. Such interpretations require special circumstances, and thus contrast is not an inherent feature of the MDemP.

Why then is the feeling that MDemPs are contrastive so common? I would like to suggest that its source is exactly the fact that MDemPs are typically D-New. Out of context, a form generally used to introduce novel referents perhaps invites the imagination of a context against which the referent has maximal novelty, and hence maximal contrast.

4.2. Predemonstrative Modifiers as Restrictive

Chao (1968: 286) also suggests that predemonstrative relative clauses are "restrictive," while those following the determiner are "descriptive." He clearly understands "descriptive" to entail nonrestrictive, and those who have followed Chao's suggestion have explicitly made this connection (C.-T. James Huang 1983, C.-R. Huang 1988, inter alia). Thus Chao would gloss (1) as 'that dog—which is yellow' and (2) as 'that yellow dog.'

Unfortunately, this claim cannot explain the general cardinality presupposition of MDemPs, as Wu 1994 points out, since restrictive modification does miraculously produce uniqueness presuppositions. Chao's idea is therefore useless for current purposes.

Worse, it is arguably false, for two reasons.

First, there are environments in which nonrestrictive modification cannot occur. For example, a modifier associated with a nonspecific ('narrow scope') indefinite must be restrictive. Given a nonrestrictive reading of the modifier fluffy, and a nonspecific reading of the indefinite a dog, (24) is nonsense.

(24) *I want to buy a dog—which is fluffy.
   (intended: any nonspecific dog; nonrestrictive relative)

(25) lacks this absurd reading entirely, despite the fact that the modifier maorongrong-de 'fluffy' follows the determiner. Hence modifiers following indefinite determiners cannot be non-restrictive.

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9 Indeed, the presupposition of a nonrestrictively modified definite will always subsume that of its restrictively modified counterpart. Were post-demonstrative modifiers nonrestrictive, the DemP (1) would presuppose that U has only one dog, and add that it is yellow, while the restrictively modified (2) would require a single yellow dog, but allow for other dogs of different colors.
(25) wo xiangyao mai yi-zhi maorongrong-de gou
   I want buy one fluffy-DE dog
   'I want to buy a [any] dog that’s fluffy.'

Inconveniently, dem-phrases cannot be subjected to this test, since they cannot be nonspecific. But if internal modifiers cannot be nonrestrictive following indefinite determiners, it seems unreasonable to assume that, under the demonstrative determiner, they must be.

Second, (1) would be a natural thing to say facing a scrum of playful dogs, not expecting the hearer could identify his intended referent without the information that it is yellow. So, while a rich context might render the descriptive content of any noun phrase unnecessary or redundant, a post-demonstrative modifier can be quite significant in establishing the reference of the phrase. It follows that, semantically, post-demonstrative modifiers are restrictive, in any reasonable sense of that term.

4.3. Lexical Ambiguity

Li and Thompson propose that “the demonstrative nei ‘that’ ... is beginning to function as ‘the’ if it is not stressed. For example: Ni renshi bu renshi [Demp nei-ge ren ], ‘Do you know that/the person?’ (1981: 131, bracketing mine). Assuming this claim should entail its practical contrapositive (namely, that stress will force the pure demonstrative reading of nei) it cannot be perfectly correct. Were it, we should be baffled by the fact that (14)—wherein two identical MDemPs are conjoined, but their determiners are stressed—is still infelicitous. Thus the claim cannot be entirely right, at least with respect to the determiner in MDemPs, and so cannot be used to explain the description-like universal presupposition of these constructions.

Annear (1965, cited in Wu 1994) suggests that the demonstrative determiner itself changes its meaning, between ‘the’ and ‘that,’ depending on position vis-à-vis the modifiers. I submit without argument that this is a sort of lexical ambiguity better avoided. An account which can explain the meaning differences of the demonstrative phrases compositionally, without positing ambiguity, is to be preferred.

10 In an endnote (1983: 84), Huang writes that a modifier following the demonstrative determiner “is non-restrictive only in the sense that it does not specify the reference of the preceding demonstrative” though it is restrictive inasmuch as “it specifies a subclass [of the head noun]” If I understand this comment, it seems falsified by the example of the doggie scrum.
4.4. Local Coreference

One last candidate proposes that DEM\(_n\)+NBAR refers to the extension of the predeemonstrative MOD. Mandarin permits headless DPs of the form MOD, which denote some set of relevant MOD things. Perhaps in (2), the predeemonstrative MOD huangse-de (‘yellow-DE’) is a headless DP designating the contextually relevant yellow things, and the subsequent string nei-zhi gou (‘DEM\(_1\) dog’) refers back to the members of that group. Yet that group will in general be much too large, and thus the speculation fails. There will often be more than one relevant yellow thing in the domain; and several yellow things cannot be referred to as that dog. Were only doghood contextually relevant, the set might shrink to the right size (namely, NUMERAL). But natural data show clearly that the property expressed by NBAR is often not salient in antecedent discourse. The local coreference theory is therefore irredeemable. Its main mistake is regarding DEM\(_n\)+NBAR as referring to the extension of the predeemonstrative modifier MOD.\(^{11}\) I will now argue that it is correctly taken to referring in that extension.

5. My Account: Predemonstrative Modifiers are Local Restrictions on the Domain

I claim that predeemonstrative modifiers are lexical and syntactically encoded realizations of the local restriction from U to U/D characteristically associated with demonstrative phrases. To put it provocatively: in the semantics, predeemonstrative modifiers are operationally equivalent to finger-pointings (inter alia). MDemPs are simply DemPs where the local domain-restriction is verbal and explicit within the scope of the demonstrative phrase itself, rather than supplied by context. I will say that the semantic interpretation of a demonstrative phrase contains a context variable M, which is instantiated either by MOD or by MOD\(_\text{CXT}\), where MOD\(_\text{CXT}\) denotes U/D, as specified by context at utterance. These conclusions follow directly from the data as analyzed in Section 3.

\(^{11}\) Two other problems with the coreference idea are that it would require unprecedented binding mechanisms to assure the strict locality of anaphora, and that, quite incorrectly, it would allow MOD and the following determiner to constitute distinct intonational phrases.
5.1. **MOD is in Complementary Distribution with MOD\textsubscript{CXT}**

Demonstrative phrases, like (1) and its English translation, are characteristically open to context. NBAR does not saturate the function denoted by the dem-phrase; further restrictions on reference can be supplied by context. Conventionally, such context-dependence is formally encoded by adding a variable (of appropriate type) to the context-dependent function—a context variable—to be instantiated by information from outside the scope of the function (Chierchia 1995, Westerståhl 1989, among others). We may plausibly do the same for DEM\textsubscript{n} (as, in essence, does Kaplan 1977). In the semantic representation of a DemP, NBAR will instantiate one variable in DEM\textsubscript{n}, but another will remain open, effectively an indexical over first-order predicates, serving to express the local restriction of \( U \) to \( U/D \). Call this context variable \( M \), and let MOD\textsubscript{CXT} be an abstract predicate such that \( \{ \text{IMOD\textsubscript{CXT}} \} = U/D \). (For example, MOD\textsubscript{CXT} might be *by-the-fountain.*) Now recall the observations in Section 3.

Based on sentences (8) and (12)–(15), I described DemPs as carrying a relative cardinality presupposition, and MDemPs a universal one. The presupposition of a DemP is relative to some provisional restriction of the domain, supplied at utterance. But that of an MDemP is fully determined by lexical content alone: context makes no further (truth-conditional) contribution. These conclusions were sloganized in (10) and (11), repeated here as (27) and (26), except that \( U/D \) in (10) is replaced by \( \{ \text{IMOD\textsubscript{CXT}} \} \) in (26).

\[
\begin{align*}
\text{(26)} & \quad \text{A DemP is felicitous only if, in } U: \\
& \quad \{ \text{IMOD\textsubscript{CXT}} \} \cap \{ \text{INBAR} \} \models \text{NUMERAL}.
\end{align*}
\]

\[
\begin{align*}
\text{(27)} & \quad \text{An MDemP is felicitous only if, in } U: \\
& \quad \{ \text{IMOD} \} \cap \{ \text{INBAR} \} \models \text{NUMERAL}.
\end{align*}
\]

(26) and (27) invite an obvious generalization. DEM\textsubscript{n} is a function part of whose semantics is the requirement:

\[
\begin{align*}
\text{(28)} & \quad \{ \text{IX} \} \cap \{ \text{INBAR} \} \models \text{NUMERAL}.
\end{align*}
\]

When there is a predemonstrative MOD, \( X \) is MOD, and when there isn’t, \( X \) is MOD\textsubscript{CXT}. Thus the interpretation of a Mandarin demonstrative phrase is completed either by a predemonstrative modifier or by a contextually supplied
restriction—but not by both. In other words, MOD and MOD$_{\text{CXT}}$ are in complementary distribution. This is *Thesis One* (T1).

(T1) Semantically, MOD is in complementary distribution with MOD$_{\text{CXT}}$.

Ideally, this fact should fall out of our compositional semantics for Mandarin. I therefore propose that pre-demonstrative MOD instantiates the very same variable otherwise instantiated by MOD$_{\text{CXT}}$, namely M. This is *Thesis Two* (T2). (T3) accommodates (T2) syntactically.

(T2) MOD and MOD$_{\text{CXT}}$ 'compete' for the same variable M in the function denoted by DEM$_n$.

(T3) Modifiers preceding the demonstrative determiner map on the variable M in the semantics.

To handle context dependence, we posit a context variable in DEM$_n$. (T2) proposes that this variable is filled by MOD, when present; (T3) says that this MOD comes right before DEM$_n$. Predemonstrative position is thus presented as a syntactic reification, within the syntactic scope of DEM$_n$, of the variable in the semantics of demonstratives which expresses the local restriction of the domain.

These conclusions explain the contrast between (1) and (2) straightforwardly. (1) and (2) have the same overt descriptive content. But (1) denotes an open formula, while (2) is closed: the variable left free in (1) is instantiated by MOD in (2). Unless the free context variable in (1) is instantiated by redundant information, therefore, (1) and (2) will differ in their presuppositions.

Let us run through a concrete example. The subject of (29) is a MDemP, with NUMERAL=2. The subject of (30) is its DemP counterpart.

(29) maorongrong-de na-liang-zhi gou dou tai ke'ai le fluffy-DE DEM$_2$ dogs both too cute LE

'The two fluffy dogs are just too cute.'

(30) na-liang-zhi maorongrong-de gou dou tai ke'ai le DEM$_2$ fluffy-DE dog both too cute LE

'Those two fluffy dogs are just too cute.'
(29) is felicitous only if, in the set of fluffy things ([|MOD|]), there are exactly two dogs ([|NBAR|]). That is, there must be just two fluffy dogs in U generally. Compare (30). It requires that there be two fluffy dogs ([|NBAR|]) in some contextually defined subset of U (U_{\text{MOD}}). There could be more outside that set. Unless U_{\text{MOD}} is the set of fluffy things, then, (29) and (30) will not have the same presuppositions.

This analysis is simple and general. It is characteristic of demonstratives that they take an extra argument, beyond NBAR. That argument locally restricts the domain of reference. The data of Section 3 show that MOD, when present, assumes the role of this argument—that is, it instantiates the variable in DEM_{\text{n}} canonically filled by the contextual restriction. My account thus adds no new machinery. It adds only a detail, namely (T3): pre-demonstrative MOD is mapped into, and fills up, M. The semantics of MDemPs thus falls naturally out of the semantics of demonstratives generally. Nothing special needs to be said about either the demonstrative or the NBAR that follows it. Thus it explains the apparent differences between MDemPs and DemPs compositionally and without positing ambiguity or unattested constructional meanings. I return to the issue of compositionality in Section 5.4, and show how other theories require a non-compositional analysis.

5.2. The Formal Translation of DEM_{\text{n}}

(31) sketches a formal interpretation of DEM_{\text{n}} consonant with the claims made above. Here, DEM_{\text{n}} is regarded as a generalized quantifier with essentially the meaning of the, plus a context variable. (See Barwise & Cooper 1981, van der Does and van Eijk 1996, and Westerståhl 1989 for background.) The formalization follows the treatment of definites in Keenan & Stavi 1986. I simplify substantially by not representing the fact that DEM_{\text{n}}-phrases are always directly referential. Conceivably, this could be remedied by adding a “rigidifying operator” in the spirit of Kaplan 1977.

(31a) gives the truth-conditions for DEM_{\text{n}}, (31b) translates DEM_{\text{n}} as a \lambda-expression. Variables are in a sans-serif font, constants in roman. M, N, and P are variables over predicates in <e,t>. The variable names are mnemonic. Given the syntax, M will be instantiated by \text{MOD}_{\text{CTX}}, N by NBAR, and P by some other predicate (e.g., the VP predicate when DEM_{\text{n}} is in the subject). As usual, ‘#’ means that a presupposition is violated, and hence the expression lacks an uncontroversial truth-value. I introduce a propositional operator \phi such that [\phi \phi \phi |] is undefined when \phi is false—the idea being that the operand represents the content of a presupposition. Thus the first
conjunct of the λ-expression in (31b) represents the cardinality presupposition associated with $\text{DEM}_n$. The second conjunct expresses the maximality condition typical of definites. In (31a), the presupposition is expressed in conditions (i) and (iii), and maximality in (ii) and (iv).

(31) a. $[l \text{DEM}_n (M, N, P) l]$

\[
= 1, \text{ iff: } (i) \quad [l M l] \cap [l N l] = \text{NUMERAL, and} \\
(ii) \quad ([l M l] \cap [l N l]) \subseteq [l P l]
\]

\[
= \#, \text{ iff: } (iii) \quad [l M l] \cap [l N l] \neq \text{NUMERAL}
\]

\[
= 0, \text{ only if: (iv) } ([l M l] \cap [l N l]) \not\subseteq [l P l]
\]

b. $\text{DEM}_n =_{\text{def}} \lambda M. \lambda N. \lambda P \varphi (\text{EXACTLY-n}(M, N)) \& \\
\forall x((M(x) \& N(x)) \rightarrow P(x))$

\[
[l \text{EXACTLY-n}(A, B) l] = 1, \text{ iff: } [l A l] \cap [l B l] = \text{NUMERAL} \\
= 0, \text{ otherwise.}
\]

\[
[l \varphi \psi l] = 1, \text{ iff } [l \varphi l] = 1 \\
= \text{undefined, otherwise.}
\]

\[
[l \varphi \& \psi l] = 1, \text{ iff } [l \varphi l] = 1 \text{ and } [l \psi l] = 1 \\
= 0, \text{ iff } [l \varphi l] = 0 \text{ or } [l \psi l] = 0 \\
= \#, \text{ otherwise.}
\]

(31a) says that (29) is true iff there are just two fluffy dogs (i), and all fluffy dogs are cute (ii). If there aren’t just two fluffy dogs, (29) is infelicitous (iii). The sentence is false only if not all fluffy dogs are cute (iv). These are just the truth conditions of the English sentence *The two fluffy dogs are cute*. The truth conditions of (30), with a DemP subject, would be those of *The two fluffy and M dogs cute*, where M is given by context.

What the truth conditions are is less important than how, compositionally, we arrive at them. $\text{DEM}_n$ is looking for M and N. The syntax arranges for it to find both in the DP, M on its left, and N on its right. (More in 5.4.) When there is no modifier to the left of $\text{DEM}_n$, M is left open to context. (If it is technically convenient to avoid free variables, M can be filled by a proform over first-order predicates when there is no MOD. I will not trouble with
this issue here, and will continue to speak of \( M \) remaining free.) Conversely, when there is a predemonstrative modifier, \( \text{it} \) instantiates \( M \) and the phrase loses its sensitivity to context. We thereby express the conclusions reached above. In the composition of the MDemP (2), the predemonstrative \( \text{huangse-de} \) ‘yellow’ fills \( M \) and \( \text{gou} \) ‘dog’ fills \( N \). But in (1), the two terms combine to fill a single argument, \( N \), leaving \( M \) open for context. The contrast follows.

Of course, there is an unlimited number of logically equivalent alternatives to (31). As long as we have three available variables, two from within the noun phrase, the critical points can be made. Whether this particular representation is attractive—independently of the inadequacies admitted at the start of this section—will depend on a variety of theoretical commitments, which I will not discuss here.

One aspect of (31) may be representationally quite useful, however. The cardinality presupposition \( \text{DEM}_n \) is represented by a conservative quantifier, \( \text{EXACTLY-n}(M, N) \), whose restriction is instantiated by the context argument \( \text{MOD}^{(\text{CXT})} \). Within dynamic approaches to semantics, it is often argued that the body of a conservative quantifier is evaluated only in that set of worlds and assignment functions which satisfy its restriction (Chierchia 1995, van den Berg 1996). Applying this understanding to \( \text{EXACTLY-n}^{(\text{MOD}^{(\text{CXT})}, \text{NBAR})} \), we have it that \( \text{NBAR} \) is evaluated only in the set denoted by \( \text{MOD}^{(\text{CXT})} \). The peculiar way (31) represents the cardinality presupposition of a \( \text{DEM}_n \)-phrase thus encodes the intuition that, when I point towards the fountain and say that yellow dog, I am not so much further restricting the \( \text{NBAR} \) as I am restricting the domain in which there must be a unique yellow dog. This intuition is of course of no truth-conditional consequence, but I would prefer to give it voice somewhere in the formalism.

---

\( ^{12} \) In a traditional semantics, quantificational relations hold between the interpretations of the restriction and of the body in the same set of worlds/assignments. See Groenendijk, Stokhof & Veltman 1996 for the advantages of the procedural perspective on evaluation defended in dynamic semantics.

\( ^{13} \) Since \( \text{EXACTLY-n}(A,B) \) is conservative and symmetric, it is trivially equivalent to a one-place relation over the intersection of its arguments. Obviously my proposal depends on taking the quantifier to be dyadic by definition, not by necessity.
5.3. The Problem of ‘Non-Intersective’ Modifiers Is Only Apparent

Scalar and non-restrictive adjectives, like enormous and imaginary respectively, present a prima facie challenge to (31). Similar adjectives can occur predemnostatively in Mandarin. If these must denote functions from common noun denotations to common noun denotations (<<e,t>,<e,t>>), then (31) is unattractive, since it takes \( \text{MOD}_{(\text{CXT})} \) to denote in \(<e,t>\). In our definition, we should have to change all instances of \((M \cap N)\) to \((M(N))\), and \(\text{EXACTLY}-n(M,N)\) to \(\text{EXACTLY}-n(M(N))\). (The restriction and body of a quantifier cannot have different types.) Also, were it necessary that \(\text{MOD}_{(\text{CXT})}\) sometimes denote in \(<<e,t>,<e,t>>\>, the story of \(\text{MOD}_{(\text{CXT})}\) as a local restriction of the domain would be difficult to express formally, since the domain is a set of individuals, not predicates.

Conveniently for me, it is not necessary. I see no significant differences between the (a) and (b) sentences in (32) and (33).

(32) a. Lester hugged an enormous tree.
   b. Lester hugged a tree that was enormous.

(33) a. I have an imaginary friend.
   b. I have a friend who’s imaginary.

This, despite the fact that enormous and imaginary in the (b) sentences do not, at any traditional level of representation, take tree and friend as arguments. It is therefore necessary to have an account of scalar and nonintersective adjectives which can explain their peculiar effects even when they clearly do not take the relevant common noun as an argument. Whatever this account is, it will sanction the assumption that \(\text{MOD}_{(\text{CXT})}\) denotes uniformly in \(<e,t>\). (See Partee 1995 for extensive discussion of related issues.)

5.4. Composition and Syntax

(31b) entails the following composition for example phrase (2). Let \(\text{huangse-de}=\text{yellow}\) and let \(\text{gou}=\text{dog}\).
That DEM\(_n\) should apply first to MOD, and then the result to NBAR, perhaps accords impressionistically with the idea of MOD as a DP-local domain restriction, but it is not necessitated by the semantics. Reversing the order of \(\lambda M\) and \(\lambda N\) in (31b) yields the logically equivalent (35).

\[
(35) \quad \lambda P \varphi (\text{EXACTLY-1}(\text{yellow}, \text{dog})) \& \forall x((\text{yellow}(x) \& \text{dog}(x)) \rightarrow P(x))
\]

\[
\lambda x. \text{dog}(x) \\
\lambda x. \text{yellow}(x) \quad \lambda M. \lambda N. \lambda P \varphi (\text{EXACTLY-1}(M, N)) \& \\
\forall x((M(x) \& N(x)) \rightarrow P(x))
\]

The coordination facts, however, prefer the structure in (34). MOD and DEM\(_n\) can coordinate, as in (36), independently of NBAR. This is evidence that MOD and DEM\(_n\) form a constituent. DEM\(_n\) and NBAR, on the other hand, cannot coordinate under a predemonstrative modifier. This is shown by (37), which cannot mean that the fish is yellow.

\[
(36) \quad [ \text{huangse-de nei-zhi he hei-de nei-zhi ] gou} \\
\text{yellow-DE DEM}_1 \text{ and black DEM}_1 \text{ dog} \\
\text{'The yellow and the black dog' (one of each)}
\]

\[
(37) \quad * [ \text{huangse-de [ nei-zhi gou he nei-tiao yu ]} \\
\text{yellow -DE DEM}_1 \text{ dog and DEM}_1 \text{ fish} \\
* \text{On the reading: 'The yellow dog and the [yellow] fish'}
\]
On a different parse, the string in (37) could mean 'the yellow dog and that fish,' where what is coordinated would be two full DPs. But it cannot have the reading given, which assumes the distribution of the modifier over both conjuncts. This argues that, in an MDemP, DEM and NBAR do not form a constituent independent of MOD. Hence we have support for the tree in (34).

Of course, (35), but not (34), looks isomorphic to the standard, uniformly right-branching X-bar structure customarily assigned to Mandarin DPs (Huang 1982, Tang 1996). I will leave open the question of whether any other hard syntactic facts (e.g., binding facts) recommend this conventional structure over the otherwise well-motivated (34).

Independent of this potential disagreement, my analysis offers a substantial syntactic fringe benefit: I avoid having to posit transformational movement of the pre­demonstrative modifier.

Other theories do not challenge the default assumption that MOD restricts the head noun—that is, combines with the head noun in the semantics. Given this, MOD cannot occupy its surface position at interpretation without composition operating over nonadjacent items, which I take to be undesirable on principle. Hence Huang, Wu and everybody else would have to move MOD to the neighborhood of NBAR. Unfortunately, positing a movement relation between pre- and post-DEM positions doesn't bring anybody any closer to explaining the meaning difference between (1) and (2). Worse, it threatens to conflate their meanings altogether.

Compare my analysis. The semantics I propose produces the effect of MOD restrictively modifying NBAR (these two properties jointly determine the referent), just not by combining the predicates before they are swallowed by DEM. MOD and NBAR instantiate distinct variables in DEM. Since DEM is adjacent to both, function application can proceed directly and only over terms contiguous at surface structure. Importantly, the valence of DEM is not increased willy-nilly, just to avoid moving MOD: the extra variable M is needed to encode the fact that NBAR alone does not saturate DEM. The insight of this paper is that this variable allows us to explain the presuppositional contrast between (1) and (2), given the empirical thesis (T1). Here we see that it also allows a minimal syntax. Thus, my account solves the semantic and the syntactic problems posed by pre­demonstrative modifiers in one and the very same stroke.
6. Extensions

6.1. Topics “Chinese-style”

Implicitly, (T2) and (T3) posit an interesting difference between English and Chinese: Mandarin (sometimes) realizes the context variable overtly in demonstrative phrases, but English does not. If true, this not only substantiates the linguistic reality of such variables (see Williams in review), but discovers an interesting dimension of cross-linguistic variation in the syntax-semantics mapping, one which I will now suggest ramiﬁes elsewhere in Mandarin.

English does not syntactically realize the demonstrative context variable. So, when the local domain is restricted verbally, that restriction is perforce periphrastic and appositive, as with phrases like As for the area by the fountain. Mandarin, on the other hand, has the option of a restricting predicate occurring bare, in a ﬁxed, non-appositive syntactic position—like a real argument. The comparison to the syntactic option of “topics Chinese-style” (Chafe 1976), or “double subject” constructions (Li & Thompson 1981), is irresistible.

These topics, exempliﬁed in (38)–(40) are neither arguments of the verb, nor coreferent with any argument of the verb.

(38) nei-xie shu shushen da
   DEMplur tree trunk big
   ’Those trees, the trunks are big.’

(39) jiaju jiu-de hao
    furniture old-DE good
    ’Furniture, old is good.’

(40) zhei-ban xuesheng ta zui congming
    DEM-class students s/he most intelligent
    ’[In] this class of students, s/he is the most intelligent.’

A distinguishing feature of such topics is exactly that they are non-periphrastic. Were they to occur within a Mandarin version of As for X, they could hardly be considered especially “Chinese-style.” But it is clear that their similarity to predemonstrative modifiers does not end with their syntactic parsimony. Chafe (1976) writes that: “What the topics appear to do is limit the applicability of the main predication to a certain restricted domain. The bigness of trunks [(38)] applies within the domain of those trees.” According to Li & Thompson (1981): “[T]he topic is the whole of which the subject is
a part. [In (38)], the subject is possessed by the topic, while in [(39) and (40)], the topic names a class and the subject names a subset of that class." I propose to generalize these analyses by saying that the topic restricts the universe of discourse to just the set it denotes, and the subsequent subject is evaluated in that set. Trunks within the set of these trees are big; old things within the set of furniture are good; s/he within the set of these students is intelligent. That is, I claim the apparatus developed for predemonstrative modifiers can be used to handle topics of the "double subject" type. From this perspective, we might call predemonstrative modifiers 'DP topics,' or the sentential topics 'IP context arguments.' This would be a welcome result, as it would minimize the amount of special machinery needed to explain the distinctive characteristics of Mandarin syntax, and its interface with semantics.

6.2. Indefinites

Modifiers may also precede the determiner in Mandarin indefinites—that is, precede the sequence NUMERAL + CLASSIFIER.

(41) a. yi-zhi huangse-de gou
   one-CLS yellow-DE dog
   'a/ofte yellow dog'

   b. huangse-de yi-zhi gou
   yellow-DE one-CLS dog
   'a yellow dog'

(42) a. liang-ge wo gege mai-de pingguo
   two-CLS I brother buy -DE apple
   'two apples my brother bought'

   b. wo gege mai-de liang-ge pingguo
   I brother buy -DE two-CLS apple
   'two apples my brother bought'

In a simple world, the apparatus designed for predemonstrative modifiers would handle (41b) and (42b) as well, with minimal adjustments and (ideally) with some explanatory benefits. I want to briefly explore the supposition that we are in the simplest world possible: the prenumeral modifier is a local domain restriction, an instantiation of a context variable, in exactly the sense

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14 Whether the domain restriction here should be local to the subject, or span the entire sentence is not perfectly clear.
discussed above for demonstratives, and hence (41b) says there is one dog in the set of yellow things. Can this idea be maintained?

The first thing to appreciate is that numeral determiners say only that at least $N$ things of a certain type are in the domain, and so there cannot be the same contrast between (41a) and (41b) as there is between (1) and (2). (41a), in which nothing precedes the numeral determiner, says (I am supposing) that there is at least one yellow dog in some subset of $U$. (I return to the question of which subset.) There may be more than one yellow dog in that subset and/or elsewhere in $U$. (41b), in which huangse-de 'yellow' precedes the determiner, says that there is at least one dog in the set of yellow things. There may be more than one dog in that set, and so, more than one yellow dog in $U$. Both (41a) and (41b), then, will say $U$ has one yellow dog and possibly more. There is no contrast here. Consequently, the theory proposed above is at least consistent with the logical semantics.

But (41a) and (41b) do differ somehow in meaning, their similarities notwithstanding. I have no satisfying account of how. The common intuition that they differ in 'emphasis' may be true, but it contributes little to an interesting theory of these constructions. One possible if obscure lead towards a more ambitious theory is suggested by the main idea of this paper, namely that predemonstrative modifiers are kin to contextually given restrictions on reference. Perhaps placing a modifier before the determiner enforces a subtle presupposition, that the set the modifier evokes is already part of, or is relevantly related to, the discourse context. To flesh this out, we might propose that (41b) and (42b) have the feel of a partitive, something like: one dog of the yellow ones, and two apples of those my brother bought. (Compare: one yellow dog, and two apples my brother bought, glosses we would assign to the (a) cases.) Preliminary research in this direction is encouraging but inconclusive: speakers' intuitions are unclear and variable.

The second fact to appreciate is that indefinites are not characteristically accompanied by deictic gestures. In the absence of an overt prenumeral modifier, then, what will fill the putative context variable? One option is to stipulate that, in the absence of a prenumeral modifier, the variable is instantiated by the universal predicate. That is, the local domain is just $U$ by default. As stipulations go, this one would not be egregious. It is just a formal expression of the banal observation that demonstratives are more sensitive to context than definite or indefinite descriptions, made within a theory generalizes the apparatus needed for the complex case to the simpler case. The only alternative is an invitation to further research. We might investigate whether Mandarin indefinites do not in fact show telling sensitivities to context. In
particular, given the speculation above, we should want to determine whether, in certain contexts, they are preferentially read as implicit (quasi-) partitives, that is, as "d-linked" indefinites in the sense of Pesetsky (1987). Again, research in this direction is up in the air. For now, I align myself with the stipulation, and await the results of further work.

6. Summary and Conclusion

The present analysis of predemonstrative modifiers in Mandarin is simple, compositional, and consonant with the facts of actual usage. Recognizing the distinctive context-sensitivity of demonstratives, I expand the valence of the function DEM_n, introducing a variable to be instantiated by context. This is standard. What I add is the thesis that, when there is a predemonstrative modifier, it instantiates exactly this variable, closing the function to context, and thereby keeping its cardinality presumption from being relativized to a smaller domain. The data support this thesis convincingly. Two string-identical MDemPs—like two identical DemPs accompanied by coextensional deictic gestures—cannot felicitously cooccur, ever. Hence predemonstrative modifiers must fill the context variable. To inscribe this conclusion in the syntax, the context variable is realized in the predemonstrative position. The semantics of MDemPs thus falls naturally out of the semantics of demonstratives generally. We achieve an analysis which is compositional at surface structure and does not posit dubious ambiguities or movements. What special tools the theory does use are themselves stimulating: if Mandarin realizes the context variable syntactically, then we have both an interesting fact about natural language semantics, and a very promising lead on how to handle other constructions that seem to involve fixing local domains of evaluation, like "Chinese-style" sentence topics. Most importantly, the theory delivers an explanation of the basic contrast between the presuppositions of (1) and (2), without claiming that predemonstrative modifiers have some special interpretation, not borne out by natural data. More subtle differences between (1) and (2), with less effect on the truth-functional semantics, are best discovered through analysis of large bodies of real discourse. Some progress towards this end is reported above. Corpus-based study will be especially useful to the understanding of pre-determiner modifiers in cardinal indefinites, since there, brute semantic effects are not visible.

Much remains to be argued and discovered, of course. I argued that Mandarin projects context variables syntactically; it follows that these variables are linguistically 'real' (see Williams in review). Even so, a finer logic for
deixis and the dynamics of local domain restriction should have to be worked out. A fuller account of the syntax of predemonstratively modified noun phrases is also necessary; I have had space only for some very coarse observations here. The extensions discussed in Section 6 certainly warrant further research as well. But not just to protect the present theory: the ideas of Section 6 seem to be of some promise in handling other facets of the Mandarin syntax-semantics interface. The suggestion that predemonstrative modifiers and topics "Chinese style" are two buds of the same plant is particularly stimulating. The question of whether the proposals made for Mandarin are of utility cross-linguistically is one last invocation to continued investigation.

References


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