

Mandarin demonstratives as strong definites

This study argues based on new experimental data that Mandarin demonstratives exhibit strong definiteness in a manner not observed with standard demonstratives (e.g. in English) (Jenks 2018).

Definiteness in Mandarin: Background. Building on Schwarz (2009, 2013), Jenks (2018) proposes that Mandarin, a determinerless language, lexically distinguishes uniqueness-based, i.e., *weak* (Frege 1892, Russell 1905), and anaphoric, i.e., *strong* (Heim 1982, Roberts 2003) definites—bare nouns are used for a unique referent in a situation and demonstratives establish anaphoric links to an existing discourse referent, as in (1a), with the exception of subject positions, where bare nouns are felicitous as anaphors since they are continuing topics (not due to being strong definites). In contrast, Dayal & Jiang (2022), presenting a different follow-up to (1) as in (1b), claim that Mandarin bare nouns are felicitous in both uniqueness and anaphoric contexts regardless of the syntactic position, whereas demonstratives behave as standard demonstratives.

- (1) Jiaoshi li zuo zhe yi ge nansheng yi ge nüsheng
classroom inside sit PROG one CL boy one CL girl
'There is a boy and a girl sitting in the classroom.'
- a. Wu zuotian yudao #(na ge) nansheng b. Nüsheng zuo zai nansheng pangbian.
I yesterday meet that CL boy girl sit dur boy side
'I met the boy yesterday.' 'The girl was sitting next to the boy.'

Dayal & Jiang (D&J) link the contrast between (1a) and (1b) to different situations invoked by the follow-up sentences. When the initial situation in (1) remains unchanged, speakers opt for the simpler of two felicitous options, the bare noun, as in (1b). If the situation expands, as in (1a) (e.g., including a new participant), the demonstrative is preferred, as bare nouns might become infelicitous if the extension in situation is drastic enough to fail the uniqueness requirement of the definite. Demonstratives, though, would remain felicitous, as they have an anti-uniqueness requirement (*the sun* vs. *#that sun*, e.g., Robinson 2005), which can be satisfied in a wider situation.

Anaphoric demonstratives: Background. Experimental work has shown that the acceptability of anaphoric demonstratives, in contrast to definites, depends not only on the situation extension in the follow-up sentence but also on the number of discourse referents (NPs) introduced initially. Saha (2023) and Saha *et al.* (2023) obtained acceptability judgments from one language with determiners (English) and two determinerless languages (Turkish, Bangla) encoding definiteness distinctly: Turkish via bare nouns, Bangla by preposing the NP in front of the classifier. The context manipulated the situation (**same** vs. **new**) and the number of NPs (**one** vs. **two**):

- (2) {[*OneNP* A boy]/ [*TwoNP* A boy and a girl]} entered the classroom.
- a. The/That boy sat down in the front row. (Same Situation)
b. I had noticed the/ that boy at a coffee shop yesterday. (New Situation)

Across all three prior languages tested (English and Turkish in Saha *et al.* 2023, and Bangla in Saha 2023), definites were near ceiling in these contexts and were rated significantly higher than demonstratives, while the acceptability of demonstratives varied significantly and were highest in One NP contexts and in New Situations (Fig 2). Saha *et al.* (2023) argue that anaphoric definites (3a) and demonstratives (3b) include an anaphoric index argument (Schwarz 2009 and D&J 2022), while demonstratives differ in evoking focus alternatives on the index (4c). Definites are acceptable in the absence of focus (4a) or when the focus is on the entire DP (4b). Along with the assumption that they are evaluated at the maximal situation, the distinctive behavior of demonstratives is explained as follows: They degrade in 2 NP cases due to a bias toward focus on the

DP. They also degrade in Same Situations compared to New Situations, as continuing with a New Situation is more compatible with considering a maximal situation involving other boys.

- (3) a. $\llbracket \text{DEF} \rrbracket = \lambda s. \lambda y. \lambda P : \exists! x [P_s(x) \wedge x = y]. \iota x [P_s(x) \wedge x = y]$ (Schwarz 2009)
- b. $\llbracket \text{DEM} \rrbracket = \lambda s. \lambda y. \lambda P : \text{Maximal}(s) \wedge \exists! x [P_s(x) \wedge x = y] \wedge |P_s| > 1. \iota x [P_s(x) \wedge x = y]$
- (4) a. the boy (no focus with DP) e.g. 1 NP cases
 $\llbracket \llbracket \text{DEF } 1 \rrbracket \text{ boy} \rrbracket^o = \iota x [\text{boy}(x) \wedge x = g(1)]$
- b. the BOY (as opposed to the girl) e.g. 2 NP cases
 $\llbracket \llbracket \text{DEF } 1 \rrbracket \text{ boy}_F \rrbracket^f = \{ \iota x [\text{boy}(x) \wedge x = g(1)], \iota x [\text{girl}(x) \wedge x = g(2)] \}$
- c. THAT boy (as opposed to another boy) e.g. 1 NP, New Situation cases
 $\llbracket \llbracket \text{DEM } 1_F \rrbracket \text{ boy} \rrbracket^f = \{ \iota x [\text{boy}(x) \wedge x = g(1)], \iota x [\text{boy}(x) \wedge x = g(3)] \}$

Our Study: Design & Methods. We adapted the experimental paradigm in Saha (2023) and Saha *et al* (2023) to Mandarin to test contrasting claims in Jenks (2018) and D&J (2022) about Mandarin (definite) bare nouns and demonstratives in anaphoric contexts. The acceptability of definites vs. demonstratives were tested across 12 scenarios varying (i) subject/object position and (ii) animacy. Participants (N=64) read short scenarios and were presented with two possible continuations after each, one with a demonstrative and one with a bare noun (order counterbalanced across items), and were asked to rate the acceptability of each continuation using a slider bar (Fig 1). Scenarios varied between participants in a 2x2x2 Latin Square design by number of discourse referents (one vs. two) and situation (same vs. new) [See (5)]. New situations introduced a new participant (e.g. speaker or someone else) and a temporal change from the initial situation.

Results & Discussion. We fit our data with a mixed effects linear model in R, which found a main effect of demonstratives rated significantly higher than definites in Mandarin across the board (micro-variations in ratings for subject vs object positions were not checked for) with no significant effect of either Situation or number of NPs. Within definite responses, we found a main effect of situation: Definites were significantly more acceptable in Same Situation follow-ups (Fig 2). The strong preference for demonstratives in anaphoric contexts supports Jenks' claim of strong definiteness (contra D&J 2022). However, in line with D&J, definite bare nouns are also felicitous (though less preferred) in anaphoric contexts. *Demonstratives:* The contrast of the Mandarin data against the consistent patterns found in English, Turkish, and Bangla firmly establish that anaphoric demonstratives in Mandarin do not behave like demonstratives but pattern more closely with anaphoric definites in these languages. Building on Saha *et al.* (2023), we argue that, unlike standard anaphoric demonstratives, which mandatorily evoke focus on the index argument, Mandarin demonstratives allow for the absence of focus on the index, akin to (4a) and (4b). *Definites:* We see an effect of situation in the relative acceptability of anaphoric definites; they are less preferred in New Situations, as claimed by D&J, but our findings diverge in that definites do not surpass demonstratives in acceptability within Same Situations. We argue that this stems from the ability of Mandarin sentences with bare nouns to also have generic readings due to lack of tense and aspectual marking, as well as indefinite readings for postverbal bare nouns (e.g. Cheng & Sybesma 1999). But demonstratives would be unambiguously anaphoric, driving their preference across the board. In Same Situations, there is a bias towards referring to the entities introduced previously; hence definites fare better here as anaphors as opposed to New Situation.

Conclusion. Mandarin demonstratives patterned as we would expect of strong definites, compatible with studies on language change showing stable grammaticalization clines of demonstratives toward definite articles across languages in contexts where both can occur (Diessel 1999).

一个男孩和一个女孩走进了教室。

我昨天在书店见过那个男孩。

最 unnatural

最 natural

我昨天在书店见过男孩。

最 unnatural

最 natural

Figure 1: Screenshot of Mandarin experiment in 2 NP New Situation Condition

- (5) {[_{1NP} yi ge nanhai]/[_{2NP} yi ge nanhai he yi ge nvhai]} zoujin le jiaoshi.
 one CL boy one CL boy and one CL girl walk.into PERF classroom
 ‘A boy/A boy and a girl walked into the classroom.’

- a. {∅/na ge}nanhai zuozai qianpai.
 ∅/that CL boy sit.at front.seat
 ‘The/That boy sat at the front.’

(Same situation)

- b. wo zuotian zai shudian jian guo {∅/na ge}nanhai.
 I yesterday at bookstore see PERF ∅/that CL boy
 ‘I saw the/that boy at the bookstore yesterday.’

(New situation)

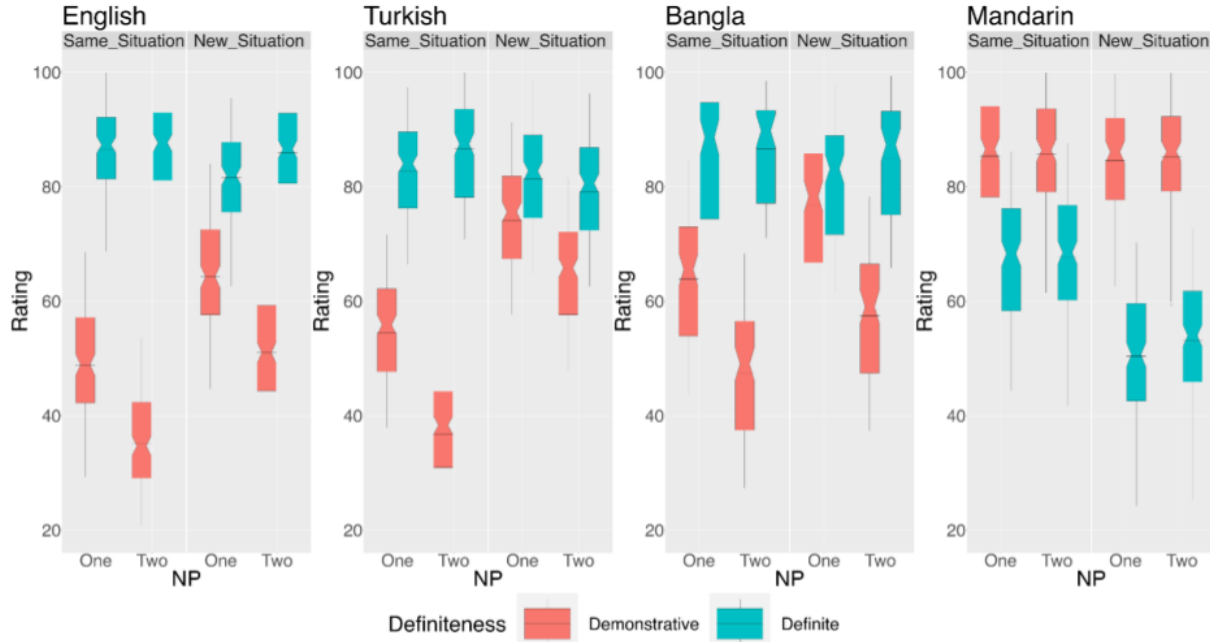


Figure 2: Anaphoric **Definites** vs **Demonstratives**: English, Turkish (Saha *et al.* 2023), and Bangla (Saha 2023) vs Mandarin (our present study)

Selected References. Cheng & Sybesma 1999. Bare and not-so-bare nouns and the structure of NP. Dayal & Jiang 2022. The puzzle of anaphoric bare nouns in Mandarin: a counterpoint to *Index!*. Diessel 1999. Demonstratives: Form, function and grammaticalization. Jenks 2018. Articulated definiteness without articles. Saha 2023. The anaphoric potential of demonstrative descriptions: An experimental study. Saha, Sağ & Davidson. 2023. Focus on demonstratives: Experiments in English and Turkish. Schwarz 2009. Two types of definites in natural language. Schwarz 2013. Two kinds of definites cross-linguistically.