

Presence and form of modification affect demonstrative use in Mandarin

Gregory Antono & Daphna Heller (University of Toronto)

The most frequent word in English is the definite determiner *'the'*. English definite descriptions are used in contexts of uniquely identifiable referents [1] and of familiarity, namely when an object is previously mentioned [2]. Yet, many languages of the world lack a definite determiner. Instead, many languages, such as Mandarin, use bare nominals and demonstrative descriptions [Example 1]; yet it is not well understood how those map onto uniqueness and familiarity. To our knowledge, only a single corpus [3,4] has examined the production of referring expressions against a well-defined visual context, finding that (i) when referring to a uniquely identifiable object, bare nominals were much more likely than demonstrative descriptions [3], and that (ii) participants tended to include more modifiers than strictly necessary to identify a target object [4].

Here we examine effects of familiarity (Exp. 1), and of informativity and typicality (Exp. 2) on the distribution of Mandarin bare nominals vs. demonstrative descriptions. Mandarin speakers (N=43) watched 25 short animations that depicted 2-3 events, heard a narration of 1-2 events, and then narrated the final event by forming a sentence from a word bank (Fig. 1).

Exp. 1 examined unmodified descriptions, focusing on the effects of familiarity on the distribution of referring expressions. A unique object was first introduced using a bare nominal (cf. [3]). Participants had to form a sentence to describe the same whole object (anaphoric, e.g. *dollhouse*) or a unique part of that object (bridging; e.g. *roof*) [5] (Fig. 2). We found (Fig. 4) that (i) both bare nominals and demonstrative descriptions were used, and that (ii) demonstrative descriptions were significantly more likely to be used for anaphora than bridging (anaphoric: 62%; bridging: 49%; $\beta = 0.532$, $p < 0.05$), consistent with first-mention being biased towards bare nominals.

Exp. 2 used color adjectives to probe two questions about modification: first, whether a contrastive context affects the presence of the demonstrative, and, second, whether typicality and/or contrastive contexts affect the presence and the form of the modifier. Specifically, we examine the “linker” *de* [Example 2], whose absence has been associated with typicality [6,7]. Participants referred to first-mentioned entities in three contexts: (a) Contrastive-Prototypical (*yellow banana* with a green one), (b) Contrastive-Non-prototypical (*green banana* with a yellow one), (c) unique Non-prototypical (*green banana* alone). We find that (i) our manipulations of contrastiveness and typicality did not affect demonstrative use [Fig. 4] and that (ii) color modification occurred both contrastively [typical: 95.3%, nontypical 100%: cf. [8]] and non-contrastively, even for non-prototypical referents when modification is superfluous (non-prototypical 95.3%: cf. [9]). To our surprise, the presence of the linker *de* was not modulated by the typicality of the object, contrary to the predictions from the literature [6,7]. Interestingly, however, *de*-presence influenced the form of the referring expression (Fig. 5): despite the small number of cases without *de*, they were overwhelmingly bare nominals.

Conclusion. Building on prior work on definite descriptions and reference production against visual contexts, our results provide insight on the distribution of referring expressions in a determinerless language like Mandarin. Although both unmodified bare nominals and demonstrative descriptions were used in familiar contexts, we found a preference for demonstratives particularly for anaphoric (whole) referents. In contexts manipulating a referent's uniqueness (via colour prototypicality and informativity), we found that the context (e.g. contrastiveness) does not affect the distribution of both strategies. Intriguingly, our results instead point to an interaction between demonstrative use and the nominal linker *de*, suggesting that the presence and *form* of modification impacts the use of Mandarin demonstrative descriptions.

MANDARIN EXAMPLES

- (1) Xiaoli na-zou le [(na-ge) wanju-xiaowu / wuding]
 Xiaoli take-away-PST DEM dollhouse / roof
 “Xiaoli took away [(the) dollhouse / roof].”
- (2) lü-se (de) xiangjiao
 green-colour DE banana
 “green banana”



Figure 1. Word bank for production of sentence.



(1) Setup sentence (heard)
 “Xiaoming moved the dollhouse to the drawers.”



(2a) Anaphora (Whole):
 Target: “Xiaoli took away [(that) dollhouse].”

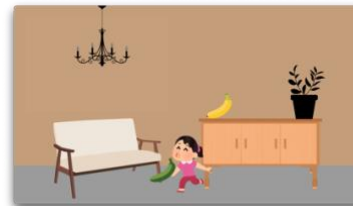


(2b) Bridging (Part):
 Target: “Xiaoli took away [(that) roof].”

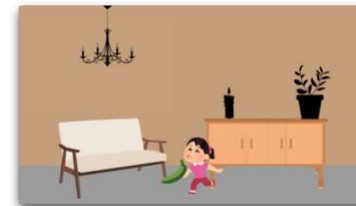
Figure 2. Still scenes from Exp. 1 (unmodified, unique referents). Participants watched the silent animation, heard an audio clip in Mandarin describing (1), then composed a target sentence for (2a: anaphoric) or (2b: bridging).



(a) Contrastive-Prototypical;
 Target: yellow banana



(b) Contrastive-Non-prototypical
 Target: green banana



(c) Non-contrastive-Non-prototypical
 Target: green banana

Figure 3. Still scenes from Exp. 2, which had 3 conditions (the target sentence appeared after a setup sentence that did not mention the bananas).

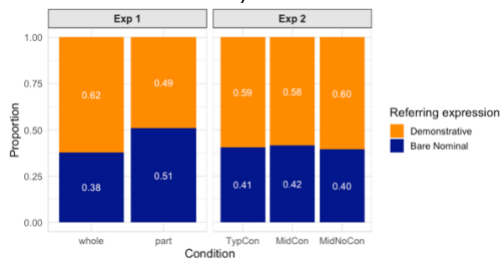


Figure 4. Proportion of demonstrative use in Exp. 1 (left) and Exp. 2 (right)

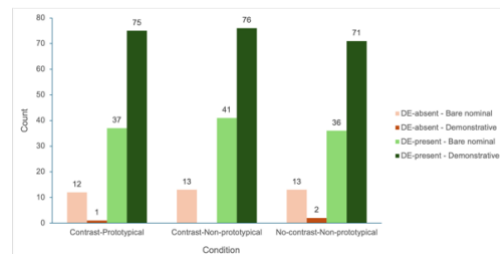


Figure 5. Demonstrative-use as a function of the presence and absence of the linker *de*. (Exp. 2)

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