

## Establishing discourse relations: two contrastive markers in Mandarin

This paper compares two discourse particles, *ba* and *ne*, both of which have been suggested to mark a topic as contrastive in Mandarin (e.g. Chu 2006, Constant 2014). We present novel data showing that while *ne*-marked topics can be used to partially address a question, *ba*-marked topics can be used only when the speaker is uncertain or does not believe the question is answerable. We argue that *ba* and *ne* establish different discourse relations w.r.t. their preceding discourse segments: *ne* is typically used to accept and elaborate on a prior move, whereas *ba* is used when the current utterance contrasts from the *background* information of a prior utterance. We show the account can be extended to explain other uses of the particles, and sheds light on the understanding of question-answer strategies in the language.

**Issue.** *ne* and *ba* are among the rich array of Mandarin sentence-final particles, but both of them can also function as optional topic markers sentence-internally, which signal a contrast between the marked topic and another topic. In many cases, *ba* and *ne* are interchangeable, as in (1), where the two possible solutions contrast from each other.

- (1) bu gei qian **ne/ba**, buhaoyisi bai-na; gei qian **ne/ba**, you gei-bu-qi.  
NEG give money NE/BA ashamed free-take give money NE/BA but give-NEG-up  
'Suppose I don't pay for it, I am ashamed to take something for nothing; and if I am to pay for it, I can't afford it.' (Chao 1968: 807)

However, the need for a more precise analysis for *ba* and *ne* surfaces when we consider a construction with typical contrastive topics, as in (2). In (2a), the constituent that *ne* or *ba* marks, *Mary*, contrasts with the other topic, *John*, but this contrastivity does not improve the felicity of *ba*. To the contrary, *ba* can be felicitously uttered when B expresses her uncertainty on what Mary brought, as in (2b). From (2) we see that contrastivity is not sufficient for the licensing of *ba*.

- (2) (At a potluck.)  
A: *What did John and Mary bring?*  
a. B: En... Yuehan dai-le pijiu, mali **ne/#ba** dai-le mifan.  
*Well... John brought beer, Mary brought rice.*  
b. B': En... Yuehan dai-le pijiu, mali **?ne/ba** wo bu tai qingchu.  
*Well... John brought beer, I'm not sure about Mary.*

In fact, contrastivity is also not necessary for *ne* or *ba* to be felicitous, as in (3). In (3a), *ne* can attach to the aboutness topic *shuiguo* which is in a direct answer to A's question, whereas *ba* is not felicitous. In (3b), B is denying the presupposition of A's question, which makes *ne* sound degraded, but *ba* perfect in the sentence.

- (3) A: *What fruit does Sue like?*  
a. B: shuiguo **ne/#ba**, su xihuan boluo.  
*(As for) fruits, Sue likes pineapples.*  
b. B': shuiguo **??ne/ba**, su genben bu xihuan chi.  
*(As for) fruits, Sue doesn't like eating at all.*

**Proposal.** We argue that the infelicity of *ne* or *ba* in (2) and (3) results from their discourse relations with the *background* information of the prior move. In (2) and (3), the *background* is the presupposition of the questions. We propose that *ba*-marked utterances are obligatorily in *contrast* to the *background*, whereas *ne* generally dislikes strong contrasts with presuppositions. Instead, *ne* is used to *continue*, or further *elaborate* on a previous topic (see also Schlöder & Lascarides 2020 for English L% and LH% contours). We implement our analysis in the Segmented Discourse Representation Theory (SDRT, Asher & Lascarides 2003). The language

for describing discourse structures consists of the following vocabulary: (i) a set of discourse unit labels  $DU = \{\pi, \pi_1, \pi_2, \dots\}$ ; (ii) a finite set of discourse relation symbols  $Rel = \{R_1, \dots, R_n\}$ . The logical form in SDRT consists of a set of labels  $\Pi$ , and a function  $F$  which maps each label  $\pi$  to a formula  $K$  which describes the content of  $\pi$  (written as  $F(\pi) = K$  or  $\pi: K$ ). Logical forms are *constructed* by *defeasible inferences* (interpretations that are pragmatically preferred). We assume the axioms in *glue logic* that reason about which coherence relations connect which labels. In glue logic, an underspecified value is denoted by a variable  $?$ . The definition of the updates of utterances with topic markers *ne* and *ba* is as follows.

- (4) Given the current utterance  $\pi$ , a prior discourse segment  $\alpha$  where  $K_\pi$  most coherently attaches, let  $\alpha^b : K_{\alpha^b}$  be the *background* content of  $\alpha$ .
- Update a *ne*-marked utterance with  $\pi : K_\pi, \pi^r : R^{ne}(\alpha, \pi)$  such that  $K_\pi$  and  $K_\alpha$  are coherently connected to form an underspecified relation  $R^{ne} = ?$  which can be resolved to *Elaboration* or *Continuation*.
  - Update a *ba*-marked utterance with  $\pi : K_\pi, \pi^r : R^{ba}(\alpha^b, \pi)$  such that  $R^{ba} = Contrast$ .

Take (3b) as an example, where *ba* is felicitous but *ne* is not. The definition in (4b) yields the logical forms of (3b) in (5). The presupposition of the question  $\alpha^b$  binds to the prior unit  $\alpha$  by glue logic. In (5), the presupposition  $\alpha^b$  and  $\pi$  form a strong contrast w.r.t. the polarity, so *ba* is felicitous. On the other hand, (3a) has the logical form  $\exists x.\text{pineapple}(x) \wedge \text{like}(s, x)$ , which fails to establish a relation of *Contrast* with  $\alpha^b$  (# Sue likes some fruit, but Sue likes pineapples). Instead, (3a) shares the same topic *fruit* with the question, which implies a relation of *Continuation* between  $\alpha$  and  $\pi$ .

- (5)  $\alpha^r : background(\alpha^b, \alpha)$   
 $\pi^r : contrast(\alpha^b, \pi)$   
 $\alpha : ?\lambda y.\text{fruit}(y) \wedge \text{like}(e_1, s, y)$  *What fruit does Sue like?*  
 $\alpha^b : \exists x.\text{fruit}(x) \wedge \text{like}(e_1, s, x)$  *Sue likes some fruit.*  
 $\pi : \neg\exists z.\text{fruit}(z) \wedge \text{like}(s, z)$  *There is no fruit that Sue likes.*

Turning to (2), we assume *ne/ba*-marked utterances attach to the question, not to the immediately preceding sentence, given that *John brought beer* only partially addresses the question, and thus it establishes a relation of Indirect Question-Answer Pair (IQAP) with the question. According to A&L, IQAP is a *subordinating* relation; namely, the right frontier node of the discourse is still accessible. In (2a), it is obvious that the marked topic *Mary* is part of the group of *John and Mary*, so  $R^{ne}$  is resolved to *Elaboration* by the Axiom:  $(\lambda: ?(\alpha, \beta) \wedge Subtype_D(\beta, \alpha) > \lambda : Elaboration(\alpha, \beta)$  (A&L 2003: 206). In (2b), the marked utterance (*I'm not sure about Mary*) has an inference that *it is possible that Mary didn't bring anything* ( $\diamond\neg\exists y.\text{bring}(m, y)$ ). The inference forms a weak contrast with the presupposition (*Mary brought something, but I don't know what she brought/but it is possible that she didn't bring anything*), which facilitates the use of *ba*. The weakness of the contrast also explains why the felicity of *ne* is improved but not absent in (2b) as compared to (3b).

**Possible extensions.** The present account provides broader coverage of empirical data. For example, in Mandarin the adverbial *zaishuo*, which can be roughly translated to 'furthermore', can be considered as a marker of further elaborations on a common topic. *zaishuo* often occurs together with *ne*, but not *ba*. Additionally, the current proposal predicts that *ba* should not be felicitous in an accepting move, and this is borne out when it functions as a sentence-final particle: *-A: Bill is at home. -B:# Yes ba*.