# Probing context sensitivity of Mandarin epistemic indefinite *mǒu*
## A presuppositional question-based analysis

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**Motivation** This paper examines the Mandarin prenominal marker *mǒu* from the perspective of the syntax-semantics-pragmatics interface and investigates how context sensitivity contributes to the shape of epistemic effects signalled by this marker. As shown in (1a), this marker strongly signals an unknown epistemic inference as it is not compatible with a continuation like (1b) providing specificational information about the identity of the boy. Although epistemic/modal indefinites from other languages (e.g. German, English, Spanish, Romanian) have attracted much attention in current semantic theorizing (e.g., Dayal 1997; Farkas 2002; Alonso-Ovalle & Menéndez-Benito 2015), a compositional analysis of Mandarin *mǒu* is still elusive.

(1) a. Tā  zhèngzài gēn  gébì       bān  mǒu  yí  gè nánshēng tán-liànài ne.
  *she PROG   with neighboring class MOU one CL  boy     date     SFP*
  Lit. 'She is dating with some boy in the class next door.'
 b. Nà   gè nánshēng jiù   shì  Xiǎomíng.
  *that CL  boy      JIU COP Xiaoming*
  Lit. 'That boy is Xiaoming.'

***Mǒu* as an Epistemic Determiner** Four pieces of evidence, one syntactic and three semantic, establish that *mǒu* is an epistemic indefinite. Syntactically, *mǒu* behaves as a determiner as it competes with Mandarin demonstratives like *nà* 'that' (and quantifiers like *suǒyǒu* 'all' and *dàduōshuò* 'most'), which are assumed to occupy a determiner position (Huang, Li & Li 2009). Semantically, there are three tests to diagnose the existential quantificational force of *mǒu*. Like an indefinite expression, *mǒu* doesn't allow modification of *jīhū* 'almost' and when modified by the exception phrase *chúle*, *mǒu* yields an additive reading but not an exceptive reading as a whole. Moreover, *mǒu* can appear in presentational existential constructions and triggers $\exists \wedge \neg\forall$ scalar implicatures.

**Data** There are six datapoints worth discussing. **First**, the epistemic unknown inference of *mǒu* should be analysed as a presupposition. Although Mandarin *wh*-indefinites also induce certain epistemic effects and convey ignorance, which are treated as conversational implicatures by Liu & Yang (2021), the epistemic unknown inferences triggered by *mǒu* consistently project across intensional and downward entailing contexts (as shown by the *if*-conditional in 2), suggesting that the status of the epistemic effects of *mǒu* is presuppositional.

(2) Ruguǒ tà   mǒu  gè shíjiān zài    lái     dǎrǎo    nǐ, qǐng    gàosù wǒ.
  *if   he MOU CL time     again come    bother  you please  tell    me*
  Lit. 'If  he  comes  to  bother  you  at  some  time  again,  please  let  me  know.'
  $\Rightarrow$ There exists an evaluator (most likely, the speaker) who does not know when he comes to bother the addressee again.

  **Second**, the epistemic unknown inference of *mǒu* is relativized to a sentient evaluator, to whom the ignorance inference is attributed. Usually, an evaluator is resolved to the speaker but other sentient attitude holders are also possible. The evaluator can also be bound by a quantifier as shown in (3), showing that an evaluator index should be postulated in *mǒu*'s lexical semantics.

(3) Guòqù yī  niān, měi  gè xuéshēng dōu yīnwéi  jiēchù guò  mǒu  yī xiē cáiliào guòmǐn.
  *past  one year every CL student  DOU because contact GUO MOU one CL  material allergy*
  Lit. 'During last year every student were allergic because of contacting some material.'
  <u>The bound evaluator reading</u>: for every student *x*, there exists material *y*, *x* was allergic after contacting *y* and *x* doesn't know what *x* contacted).

  **Third**, unlike English *whatever* that is compatible with both ignorance and indifference (von Fintel 2000), Mandarin *mǒu* tends to convey only epistemic ignorance but not agent indifference as witnessed by the following example.

(4) Zhāngsān ná le zhuōzishang de mǒu bǎ yǔsǎn jiù chōng le chūqù.
*Zhangsan take LE table DE MOU CL umbrella JIU rush LE out*
Lit. 'Zhangsan took some umbrella on the table and then rushed out.'
⟹ An evaluator, possibly, the speaker doesn't know which umbrella ZS took.
⇏ Zhangsan doesn't care which umbrella he took.

**Fourth**, given *mǒu*'s ability to induce extra epistemic effects and mark insignificant or withheld information, it is not surprising to see that a nominal phrase marked by *mǒu* is not a suitable focus associate of focus-sensitive operators like *zhǐyǒu* 'only'/ *yě* 'also' as *mǒu*'s epistemic unknown presupposition might conflict with the final determinization of an alternative set for focus quantification.

(5) a. # Zhǐyǒu [mǒu gè tóngxué]$_{+F}$ chídào le. b. # [Mǒu gè tóngxué]$_{+F}$ yě chídào le.
  *only MOU CL student late LE        MOU CL student  also late LE*

**Fifth**, although *mǒu* behaves like an indefinite, it can't be simply considered as variables in the Heim-Kamp tradition as it does not witness any quantificational variability effects (Compare 6a with 6b). Neither can *mǒu* function as a donkey anaphor.

(6) a. Tōngcháng, yí gè rén huì gǎndào gūdān.
  *usually one CL person will feel lonely*
  Lit. 'Usually one can feel lonely.' ⟹ **Usually** $x$ [$x$ **is-human**] [$x$ **feels lonely**]
b. Tōngcháng, mǒu gè rén huì gǎndào gūdān.
  *usually MOU CL person will feel lonely*
  ≠ **Usually** $x$ [$x$ **is-human** ∧ $x$ **is-unknown**] [$x$ **feels lonely**]

**Sixth**, like canonical indefinites, *mǒu* can obtain an island-escaping widest scope interpretation in (7), yielding the scopal sequence *mǒu*P ≫ *if* ≫ DOU 'all'. Besides, *mǒu*P can also take intermediate scope, yielding a situational-variation reading (*if* ≫ *mǒu*P ≫ DOU 'all').

(7) Rúguǒ měi gè yuángōng dōu xuǎnzài mǒu yì tiān qǐngjià, zhěng gè bùmén de
  *if every CL employee DOU choose MOU one day leave whole CL department DE*
yùnzuò jiù shòudào yǐngxiǎng.
*operation JIU get affected*
  Lit. 'If every employee chooses to ask for a leave on a certain day, the operation of the whole department gets affected.'

**Proposal** Based on the empirical observations above, we suggest a two-dimensional preliminary semantics of *mǒu* as in (8) wherein the above line encodes the epistemic presupposition (as marked by $\partial$) relativized to an evaluator index $\mathcal{G}(i)$ with an embedded question semantics, i.e., the evaluator cannot fully resolve the question $Q$ signalled by the sentence containing *mǒu*. The ignorance effect, i.e., not knowing, is formalized as $\mathcal{G}(i)\text{-}\neg\Box^{\mathbf{Dox}}\text{-}[\mathbf{Ans}\,(Q)]$ (the evaluator does not know the answer to the question with ANS being an answerhood operator) and $Q$ can be compositionally resolved based on the sentence containing *mǒu* as defined in (8) below.

(8) ⟦mǒu⟧$^{\mathcal{M,G,C}}$                 *An embedded question-based semantics*

$$= \frac{\partial\,[[\exists y_e = \mathbf{Evaluator}\,(\mathcal{G}(i))\text{ in }\mathcal{C}] \wedge \overbrace{[\mathcal{G}(i)\text{-}\neg\Box^{\mathbf{Dox}}\text{-}[\mathbf{Ans}\,(Q)]]}]}{\underbrace{\lambda\mathcal{F} \in \mathbf{CH}_{<<e,t>,e>}.\,\lambda f \in \mathcal{D}_{<e,t>}.\,\mathcal{F}(\lambda x_e.\,f(x))}}$$

*mǒu* introduces a choice-functional variable

where $Q \in \mathcal{D}_{<<s,t>,t>} = \lambda p_{<s,t>}.\,\exists\mathcal{F}_{<<e,t>,e>}.\,\mathcal{F}\,(\lambda x_e.\,f(x)) \wedge p = \lambda w'.\,g_{w'}\,(\mathcal{F}(\lambda x_e.\,f(x)))$
      $= \{p \in \mathcal{D}_{<s,t>} | \exists\mathcal{F}_{<<e,t>,e>}.\,\mathcal{F}\,(\lambda x_e.\,f(x)) \wedge p = \lambda w'.\,g_{w'}\,(\mathcal{F}(\lambda x_e.\,f(x)))\}$

Instead of treating *mǒu* as introducing variables as in dynamic semantics, its at-issue component (the second line) denotes a choice function, which can be existentially closed at various scopal positions, accounting for the island-insensitive scopal property.

**Consequences** The lexical entry proposed above shows that scope-taking of *mǒu* and resolving the value of an evaluator (i.e., resolved to the speaker in an utterance context) are two independent processes, which are responsible for deriving both *scopal specificity* and *epistemic specificity* witnessed by Mandarin *mǒu* (varieties of specificity have been discussed in the literature e.g., Enç 1991 and von Heusinger 2002).

**Selected References** Alonso-Ovalle & Menéndez-Benito (2015). *Epistemic Indefinites*. OUP; von Heusinger (2002). Specificity and definiteness in sentence and discourse structure. *Journal of Semantics*, Vol. 19 (3), p.245-274.