A Constraint-based Analysis of A-NOT-A Questions in Mandarin Chinese

1 Introductory Remarks

The present study provides a constraint-based analysis of A-NOT-A questions in Mandarin Chinese within the HPSG and MRS (Pollard and Sag, 1994; Copestake et al., 2005) framework and implements the analysis into a computational grammar for Chinese: namely, ZHONG [|]. Hereafter, the two components in the A-NOT-A structure are labelled as A_1 and A_2, respectively.[1]

Using the A-NOT-A structure is one of the ways to express polar questions in Mandarin Chinese. The specific forms of A-NOT-A questions are exemplified below. Note that all variations presented in (1) convey almost the same meaning: "Does Zhangsan like dogs (or not like dogs)?"[2]

(1) a. Basic: A-NOT-A
    张三   喜欢 不 喜欢 狗 ？
    Zhāngsān xǐhuan bu xǐhuan gǒu ?
    Zhangsan like NOT like dog PU

  b. Contracted: A'-NOT-A
    张三 喜 不 喜欢 狗 ？
    Zhāngsān xǐhuan bu xǐhuan gǒu ?
    Zhangsan like NOT like dog PU

  c. Phrasal: AB-NOT-AB
    张三 喜欢 狗 不 喜欢 狗 ？
    Zhāngsān xǐhuan gǒu bu xǐhuan gǒu ?
    Zhangsan like dog NOT like dog PU

  d. Phrasal: AB-NOT-A
    张三 喜欢 狗 不 喜欢 ？
    Zhāngsān xǐhuan gǒu bu xǐhuan ?
    Zhangsan like dog NOT like PU

As shown in the examples above, partial reduplication can result in either the verb being reproduced without its complement, or the verb being reduced to only its first character/syllable. As illustrated in (1b), this is not equally applicable to both A_1 and a A_2. For A_2, only one type of partial reduplication (i.e., deletion of complement) is permitted. The lexical types capable of behaving as a syntactic head of predicates in Mandarin Chinese, such as verbs, adjectives, and prepositions, can participate in the A-NOT-A structure (Tseng, 2009). Two more examples in which adjectives and prepositions are used are provided in (2-3).

(2) 张三 高 不 高 ？
    Zhāngsān gāo bu gāo ?
    Zhangsan tall NOT tall PU

  'Is Zhangsan tall (or not tall)?'

(3) 张三 在 不 在 家 ？
    Zhāngsān zài bu zài jiā ?
    Zhangsan at NOT at home PU

  'Is Zhangsan at home (or not at home)?'

2 Basic Constraints

2.1 Polar Questions

In the system of expressing polar questions in Mandarin Chinese, A-NOT-A questions have a sibling, in which a sentence-final particle *ma* is used (henceforth, MA-questions). For example, (4) exhibits a *prima facie* similarity to (1a).

(4) 张三 喜欢 狗 吗 ？
    Zhāngsān xǐhuan gǒu ma ?
    Zhangsan like dog MA PU

  'Does Zhangsan like dogs?'

If these two forms of polar questions are simply allostructures of each other, the semantic representation should be almost the same in order for one form to be paraphrased into the other form. However, since there are at least three reasons for believing that they are not equivalent, there is no necessity to represent them in a common way. First, they are semantically different. When a universal quantifier *dōu* appears, a scope ambiguity happens with MA-questions but not with A-NOT-A questions, as shown in (5).

(5) a. 他们 都 喜欢 不 喜欢 开车 ？
    tāmen dōu xǐhuan bu xǐhuan kāichē ?
    they all like NOT like drive PU

    'Do they all like to drive?'

  b. 他们 都 喜欢 开车 吗 ？
    tāmen dōu xǐhuan kāichē ma ?
    they all like drive MA PU

    'Do they all like to drive?' or
    'Do all of them like to drive?'

Second, they are pragmatically different. While the asker in MA-questions has a stance to the expressed preposition (e.g., confirmation or denial), the asker in A-NOT-A questions does not (Liing, 2014). Hence, the two types of polar questions are not necessarily interchangable. Third, they

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[1]Mandarin Chinese employs two negative operators such as *bù* and *méi*, the choice of which hinges on the aspectual property of the verbal item that they are attached to. Due to the page limit, we focus on *bù* herein.

[2]Due to the page limit, this paper does not deal with the final type.

differ in terms of information structure. In MA-questions, focus can be assigned to any constitutnet. For instance, in (4), either the subject, the object, or the verb can be evaluated as containing focus. By contrasnt, A-NOT-A does not signal focus to any other elements but the structure itself. In other words, A-NOT-A always bears focus (i.e., predicate focus).

2.2 Headedness

This section is about the headedness of A-not-A.

2.3 Character

(6)
$$\begin{bmatrix} +vjp \\ \text{BOUND} \quad luk \\ \text{CHAR} \quad \begin{bmatrix} char \\ \text{FCHAR} \quad string \\ \text{WCHAR} \quad list \\ \text{LENGTH} \quad length \end{bmatrix} \end{bmatrix}$$

(7) a.
$$\begin{bmatrix} 喜 \\ \text{STEM} \quad \boxed{1}\langle \text{'喜'} \rangle \\ \text{BOUND} \quad + \\ \text{CHAR} \quad \begin{bmatrix} \text{FCHAR} \quad \text{'喜'} \\ \text{WCHAR} \quad \boxed{1} \\ \text{LENGTH} \quad one \end{bmatrix} \\ \text{PRED} \quad \_喜欢\_v\_rel \end{bmatrix}$$

b.
$$\begin{bmatrix} 喜欢 \\ \text{STEM} \quad \boxed{1}\langle \text{'喜欢'} \rangle \\ \text{CHAR} \quad \begin{bmatrix} \text{FCHAR} \quad \text{'喜'} \\ \text{WCHAR} \quad \boxed{1} \\ \text{LENGTH} \quad more\text{-}than\text{-}one \end{bmatrix} \\ \text{PRED} \quad \_喜欢\_v\_rel \end{bmatrix}$$

2.4 Co-occurring Constraints

Modifiability
   Sentence-final Particles
   LE-ZHE-GUO

3 Different Forms of A-NOT-A Questions

3.1 A-NOT-A

3.2 A′-NOT-A

3.3 AB-NOT-AB

4 Implementation

5 Evaluation

gTest pyDelphin
   HELD-OUT TEST

References

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