Influences on relative clause attachment in Mandarin
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Introduction

This study examines relative clause (RC) attachment preferences in Mandarin. Consider (1a) and (1b): the possessive construction NP1 DE NP2 following the RC yields two NPs that the RC could modify. Furthermore, Mandarin DE is ambiguous between the possessive marker and the relativizer, thus (1c) yields a third reading.

Three-way ambiguous in SRCS/ASRCs

V NP0 de NP1 de NP2
(1) [Zhiliao yinger de yisheng de zhensuo]... cure baby NP0 DE1 doctor NP1 DE2 clinic
a. [[e cure baby] DE1ref doctor NP1] [DE2pos clinic] [The doctor that cured the baby’s clinic]
b. [e cure baby] DE1ref [doctor DE2pos clinic] [The doctor’s clinic that cured the baby’s clinic]
c. [e cured baby] [DE1pos doctor] DE2ref clinic [The clinic that cured the baby’s doctor]

However, corresponding Mandarin ORCs/PSRCs construction only has two readings since the first DE is unambiguously a relativizer because it is preceded by a verb.

Two-way ambiguous in ORCs/PSRCs

Passive NP0 V de NP1 de NP2
(2) [Bei Bingren tous de yisheng de zhensuo]... by patient NP0 DE1 doctor NP1 DE2 clinic
a. [[by patient sue e] DE1ref doctor] [DE2pos clinic] [The doctor that is sued by the patient’s clinic]
b. [by patient sue e] DE1ref [doctor DE2pos clinic] [The doctor’s clinic that is sued by the patient’s]

Attachment preferences on Mandarin RCs are mixed in the literature: Shen (2006) documents a local attachment preference; Kuang (2010) shows local preferences only for short RCs, but not for long RCs; Hsu (2011) finds non-local attachment preferences.

The present study

Method: a centered self-paced reading task (Linger, version 2.04)
Participants: 36 native Mandarin speakers (20 - 30 years old)
Stimuli: 144 sentences per participant (96 critical stimuli + 48 filler conditions)
Design: a 2 (AMBIG/UNAMB) * 2 (ACTIVE/PASSIVE) * 2 (Animate NP1-Inanimate NP2 (AI)/Inanimate NP1-Animate NP2 (IA)) * 2 (+DEM/-DEM) within-subject design.

Data analysis: semantic judgement targeting the RC attachment place (i.e. who cured/kissed the baby?) (Correct answers: the doctor in AMBIG and the doctor or the clinic in UNAMB) was collected by MySQL and analyzed by the linear mixed-effects regression model with junk package in R (R Core Development Team, 2008).

Results

A significant 4-way interaction was obtained. Presence/absence of ambiguity influenced judgments as we expected (i.e., left/right halves of Fig. 1 & 2, t = 7.133, p <.01).

The percentage of animate NP attachment in AI condition was significantly higher than that in IA condition in UNAMB cases (i.e., blue vs. red on right halves of Fig. 1 & 2, t = 4.757, p < .01). Crucially all correct answers to the semantic judgment questions in UNAMB cases were the animate NPs, despite of AI/IA conditions. The fact that more inanimate NP attachment (wrong answers) was found in IA than AI cases suggests a local NP attachment preference.

Moreover, judgments were less clear (less % ofAnimate-modification) for UNAMB-ACTIVE than for UNAMB-PASSIVE in [+DEM] cases (i.e. blue & red on UNAMB-ACTIVE vs. blue & red on UNAMB-PASSIVE in Fig. 1). Recall DE in Mandarin Chinese can be parsed either as a possession marker or a relativizer, our finding is consistent with an additional processing load in the ACTIVE cases (t = 2.09, p < .05) (see also Yun et al. 2014).

In AMBIG cases, AI/IA interacted with [+/-DEM] and [ACTIVE/PASSIVE], with more animate NP2 attachments in PASSIVE when NP1 was [-DEM], and the opposite pattern was observed for [+DEM] (i.e. blue & red on AMBIG-PASSIVE in Fig. 1 & 2, t = 2.181, p < .05). This may be because the dependency can be formed with NP1 when DEM is encountered (blue is higher than red in Fig. 2), but when it was absent, the animacy properties of the NP can be considered, i.e. there was less local attachment when NP1 was inanimate (i.e., red is higher than blue on AMBIG-PASSIVE in Fig. 1)(t = 2.123, p < .05). It suggests there was more animate NP attachment found in IA (non-local) than AI (local) conditions. Thus we found an animate NP attachment preference, and the animate NP attachment preference is stronger than the local NP attachment preference in PASSIVE conditions.

Discussions & Conclusions

Figure 1. %Animate-modification[-Demonstrative]

Figure 2. %Animate-modification[-Demonstrative]

Selected references


Selected references