

Audience design affects classifier positioning in Chinese relative clauses: Evidence from spoken corpus and sentence-production data

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In sentence production literature, it remains controversial whether speakers tailor their utterances to their audience ('audience design') [4,7] or plan their words according to speaker-internal constraints ('speaker-oriented') [3,5]. This study tests these two hypotheses by examining a flexible construction in Chinese, where a demonstrative+classifier (DCL) sequence that requires semantic agreement with its host head noun can occur either *before* or *after* a relative clause (RC). Using a spoken corpus and two sentence-production experiments, we investigated the distribution pattern of DCL positioning in subject-extracted RCs (SRCs, 1) and object-extracted RCs (ORCs, 2).

The speaker-oriented hypothesis posits that speakers tend to produce whatever is most accessible first (i.e., DCLs), thus buying time to plan less accessible units (i.e., bare nouns) [1,2]. This predicts no differences in DCL positioning regardless of RC types. The audience-design hypothesis posits that speakers help listeners to pre-build RC structure by providing early cues (e.g., DCLs), and to avoid situations where structural ambiguity or semantic clash occurs. This predicts an asymmetric pattern: DCLs tend to occur at the left edge of SRCs (1), but at the right edge of ORCs (2) to avoid garden-path effects (main clause vs. RC) or semantic clash (incurred by the incongruence between a mismatching classifier and a local noun, ex. 3).

We first investigated the distribution pattern of DCLs in 357 RCs extracted from a Chinese live TV-show similar to Oprah Winfrey's talk show — *Appointment with Luyu* (309,848-word). Regardless of the modifying role of RC in matrix clause or the transitivity of RC-verb, we consistently found an asymmetric distribution pattern. This, together with similar findings in written corpora [6, 8], supports the audience-design hypothesis.

We then conducted two production experiments using Paradigm software. Sentences were chunked into four parts (DCL/RC/headNoun/main-clause), each randomly assigned to four boxes in a diamond layout on a visual display. **Experiment 1** (N=42) manipulated RC types (SRC vs. ORC), with human local&head nouns modified by the same classifiers. The utterances produced by participants showed an asymmetric pattern in 444 SRCs (77.5% pre-RC DCLs vs. 22.5% post-RC DCLs; $p < .0001$), but no such asymmetries in 418 ORCs (49.0% vs. 51%). However, the asymmetric pattern emerged when examined by DCL positioning: out of 549 pre-RC DCLs, SRCs outnumbered ORCs ($p < .0001$); out of 313 post-RC DCLs, ORCs outnumbered SRCs ($p < .0001$).

Experiment 2 (N=48) used the same stimuli as Exp.1, but had animate heads and inanimate embedded nouns (ex. 3). The utterance produced by participants showed a strong asymmetry of DCL positioning by RC types: Out of 515 SRCs, pre-RC DCLs outnumbered post-RC DCLs (71.5% vs. 28.5%; $p < .0001$), out of 460 ORCs, post-RC DCLs outnumbered pre-RC DCLs (66.1% vs. 33.9%; $p < .0001$). This suggests that while participants preferred DCLs at the left edge of SRCs, animacy biased participants to put DCLs in post-RC positions in ORCs.

Taken together, the data show that DCL positions are asymmetrically correlated to RC types, and animacy configuration modulates DCL positioning. The results are compatible with the audience-design hypothesis.

- (1) Pre-RC DCL in SRC ('The girl who met the star-hunter is very beautiful.')
na-ge [RC yujian xingtian de] **nuehai** zhangde hen piaoliang
 that-CL meet star-hunter DE girl grow very beautiful
- (2) Post-RC DCL in ORC ('The girl whom the star-hunter met is very beautiful.')
 [RC xingtian yujian de] **na-ge** **nuehai** zhangde hen piaoliang
 star-hunter meet DE that-CL girl grow very beautiful
- (3) Pre-RC DCL in ORC (semantic clash)
na-kuai [RC baoan duokai de] **shikuai** diaozai dishang.
 that-CL_{stone/human} guard dodge DE stone fall ground

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