

Prenominal relatives clauses in Mandarin: Implications for theories of sentence processing

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Models of retrieval processes in sentence processing [3, 6, 1, 8] predict that increasing head-dependent distance in linguistic dependencies (such as subject-verb dependencies) leads to increased processing difficulty. A commonly held view is that completing a dependency involves a (cue-based) retrieval process that is affected by general working memory constraints like decay and/or similarity-based interference. I subsume this class of explanation under the term activation-based accounts, as the key claim is that the activation of a chunk in memory determines how easily it is retrieved.

An important test of the activation accounts is the processing of Chinese relative clauses. Relative clauses in Chinese are prenominal. This has the consequence that the distance between the relative clause verb and the head noun of the relative clause is shorter in object relatives compared to subject relatives. Activation accounts makes the surprising prediction that object relatives should be easier to process than subject relatives—the prediction is surprising because most languages exhibit a subject relative advantage. Because surprising predictions that turn out to be correct strongly validate a theory [9], Chinese represents a crucial test case for activation accounts.

Interestingly, a competing account, expectation-based sentence processing [5], makes the opposite prediction: subject relatives should be easier to process than object relatives because the former are more predictable (even in Chinese, subject relatives occur more frequently in corpora than object relatives).

Quite a few papers have been published that aim to show that the evidence from reading studies is consistent with the prediction of the activation accounts. I suggest that most of the studies that show an object relative advantage and whose data are publicly available don't show any convincing evidence for an object-relative advantage [10, 4, 13, 12], either because they have confounded designs or have drawn invalid statistical inferences (some studies have both these problems). All the previous studies were also severely underpowered, leading to biased estimates being published [2, 11].

Once these problems in the design and analyses of previous experiments are addressed, two plausible alternative explanations remain: (a) There is evidence that probabilistic expectations about upcoming structure [5] could be a better explanation at least for Chinese relatives; (b) The direct-access model of McElree [7], as implemented by [8], might furnish a better explanation than the activation-based account, at least for Chinese relative clause processing.

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