

(Not) expected to be elaborated on: Testing the Right Frontier Constraint

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Evidence has shown that comprehenders generate expectations about upcoming content in a discourse [1], [2]. Theory on discourse coherence posits that discourse is structured hierarchically, where discourse segments can be in subordinate or coordinate relationships to other discourse segments [3]. This feature of discourses has been proposed to guide what content is available for attachment [4], [5]. Under the Right Frontier Constraint (RFC: [6]), only discourse segments at the Right Frontier (RF: [6]) of discourse – the last-added segment and any segments this segment is subordinate to – are available for coherence connections with newly added segments. In this study, we test whether hierarchical discourse structure impacts comprehenders' expectations for where new discourse segments will attach. Because discourse structure operates at the clause level and can, as such, never be isolated as a factor, we also test the effect of linear structure (recency of the clause) and grammatical status of the clause (matrix vs. subordinate clause).

The RFC predicts that only content at the RF can be elaborated on in a newly added discourse segment. For coreference, this means that only referents at the RF should be expected to be picked up by a reduced referring expression. In examples (1) and (2), the relation between the first two clauses (*elaboration*) is a subordinating one, but the position of the subordinate segment differs between the examples. When the appositive relative clause (ARC) 'who owns a Persian cat', is added to the discourse in (1), it is subordinate to the matrix clause preceding it: Both the matrix clause and the ARC are at the RF at that moment and 'a cake' is available as the antecedent for 'It'. When the matrix clause is completed in (2), it is the only segment at the RF. The ARC and 'a cake' therein are not available for a subsequent coherent connection:

(1) Kathy baked a cake for Alex, who owns a Persian cat. | It's a birthday funfetti cake.

(2) Kathy, who baked a cake for Alex, owns a Persian cat. | [?] It's a birthday funfetti cake.

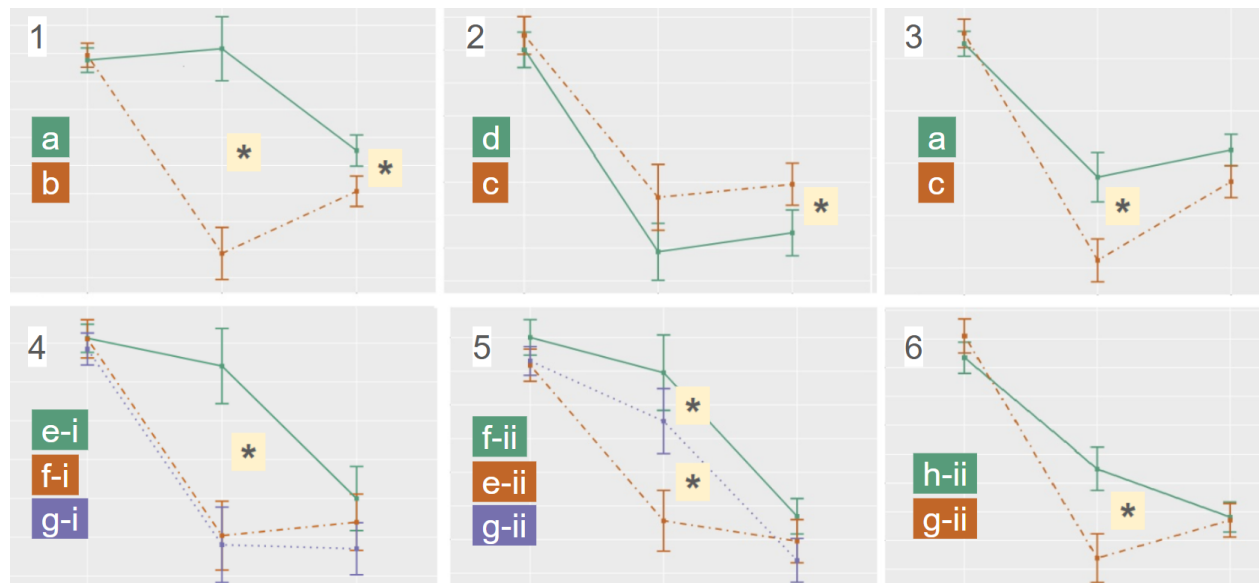
Across six self-paced reading experiments, we systematically compare how discourse-structural factors influence pronoun interpretation. We compare between reading times when a temporarily ambiguous pronoun 'It' is disambiguated (underlined in Figure 1) to a referent hosted by a clause either at the RF or not (Experiments 1, 2, 4 & 5) and we compare between reading times of this disambiguation to a referent hosted by clauses that differ in terms of their sentence-structural features but not in terms of their position at the RF (Experiments 3–6). We find that disambiguation to referents in clauses at the RF is read faster compared to disambiguation to referents in clauses not at the RF. When comparing between clauses that do not differ in terms of their position at the RF, reading times are faster when the antecedent is hosted by the most recent clause or a matrix clause. Recency, however, appears to be more important in guiding expectations about upcoming reference, as no effect of clause type (matrix vs. subordinate) was found when comparing between multiple recent segments. Our findings suggest that to arrive at the most accurate predictions for ambiguous pronoun interpretation, discourse- and sentence-structural factors should be taken into account together, with recency as a determining predictor when other factors are insufficient to decide the outcome.

Figures

Figure 1: Overview of all experimental conditions (disambiguation region underlined)

	intro	segment 1	segment 2	disambiguation	relation
a	My parents went out yesterday.	After they dined at a French bistro,	they went to a violin concert.	It was a <u>very small</u> cozy restaurant.	narration (coord.)
b		After they went to a violin concert,	<u>they dined at a French bistro.</u>		narration (coord.)
c		<u>They dined at a French bistro</u>	after they went to a violin concert.		precondition (coord.)
d		They went to a violin concert	<u>after they dined at a French bistro.</u>		precondition (coord.)
e	My mom(,)	who had just returned from a shopping trip,	<u>was having a chat with our neighbor.</u>	(i) It was <u>a quick trip</u> to get some supplies. (ii) It was <u>about their</u> plans for the weekend.	elaboration (subord.)
f		who was having a chat with our neighbor,	<u>had just returned from a shopping trip.</u>		elaboration (subord.)
g		<u>was having a chat with our neighbor,</u>	<u>who had just returned from a shopping trip.</u>		elaboration (subord.)
h		<u>was having a chat with our neighbor.</u>	He had just returned from a shopping trip.		elaboration (subord.)

Figure 2: Reading plots for all experiments (lower on y-axis = read faster). The three regions represent 'It is/was', disambiguation and spillover. Colour/letter combinations can be cross-referenced with experimental conditions in Figure 1. Asterisks indicate significance.



References

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