snippets

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Contents

Disjunction, conjunction, and exhaustivity

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Consider sentence in (1a), taken from Sauerland (2004). Sauerland and Yatsushiro (2018) inform us that, as a preschooler, Kai from (1) did not compute the scalar inference negating the conjunctive alternative in (1b). Now consider the following question: did Kai have cauliflower? That is, does the disjunctive phrase in (1a) trigger an inference about other potential alternatives such as (1c)? And is this inference equally strong for conjunctive phrases? This snippet focuses on the interaction between disjunction, conjunction, and exhaustivity effects.

(1) a. Kai had broccoli or peas last night.
b. Kai had broccoli and peas last night.
c. Kai had cauliflower last night.

Note that the conjunction in (1b) could be continued by saying that *Kai also had cauliflower*, although this seems less natural as a continuation to the disjunction in (1a). In a sentence picture verification task in Gotzner 2019, adults were more likely to derive an exhausitivity implicature with disjunction compared to conjunction (for details see https://osf.io/ahs45/). Specifically, adults tended to reject a disjunctive statement in a situation that does not exhaustively describe the scene (sentence: *The tiger or the penguin has a ball*; picture: tiger-has ball, penguin-has no object, pig-has ball; results: 45% FALSE judgments). On the contrary, almost all participants accepted a conjunctive statement in a corresponding non-exhaustive situation (sentence: *The tiger and the penguin have a ball*; picture: tiger-has ball, penguin-has ball, pig-has ball; results: 5% FALSE judgments). A similar pattern emerges in 4-5 year olds, who do not compute the scalar inference associated with disjunction (Gotzner et al. 2019).

How can we explain the fact that the choice of scalar element affects whether an exhaustivity implicature is derived? There are two likely candidates driving this difference. (i) Disjunction, but not conjunction, is associated with additional ignorance inferences. (ii) There is a difference in the relative complexity of sentences with disjunction and conjunction and their associated alternatives.

Explanation (i) assumes that a disjunctive statement like (1a) does not inform us which of the mentioned vegetables Kai had, due to ignorance implicatures. Hence, the listener may reason that no other contextual alternative is true. Conversely, the conjunction in (1b) already informs us that Kai definitely had both kinds of vegetables. Therefore, the issue of whether other alternatives are true does not arise.

Explanation (ii) is based on the structural account of alternatives by Fox and Katzir (2011), according to which alternatives are at most as complex as the original utterance. A disjunctive statement, S(A or B), has both less complex stronger alternatives and equally complex ones, involving additional contextual alternatives, for example S(A and C). On the other hand, a conjunctive statement, S(A and B), only has a stronger alternative that is more complex, S(A and B and C). Based

on complexity considerations, this alternative should not be negated. According to Fox and Katzir (2011), logically independent alternatives could be added from the context. However, the simple S(C) does not seem to be a relevant alternative to the conjunction either.

Both explanations considered here make additional interesting predictions concerning the interaction of scalars, ignorance inferences and exhaustivity. For example, in a context that does not license ignorance implicatures, would the exhaustivity implicature associated with disjunction disappear?

References

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