A probabilistic approach to the generation of conditional speech acts

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Conditional speech acts (CSAs) are conditionals where the *if*-clause expresses the circumstances under which the consequent is in some sense discourse-relevant, and not a condition for the truth of that main clause. In a question answering dialogue setting, CSAs can be used as positive (1) or negative (2) answers to a polar question:

(1)   Is there a restaurant nearby? – If you enjoy eating out, there is an Italian restaurant around the corner.

(2)   Is there a metro station nearby? – If you prefer public transport, there is a bus stop nearby.

The implicatures triggered by positive and negative CSAs are different. While the answer in (1) suggests that the speaker assumes the questioner's preference for eating out is a motivation for the question, the answer in (2) implicates not only a motivation for the question but also that there is no metro station nearby and an alternative solution for the supposed underlying decision problem is going by bus.

In this talk, we will present a probabilistic approach to content determination in a question-answer system for the generation of positive and negative CSAs. We assume that CSAs are means to solve a decision problem the respondent presumes to the questioner. The decision to use a CSA *if(p,q)* as answer is driven by probabilistic relevance (Krzyżanowska et al. 2017). We show that if the relevance value exceeds some threshold, it is beneficial to use a CSA instead of an alternative answer without the information expressed in the *if*-clause. Our computational approach results in a decision tree with internal nodes associated with tests on conditional probabilities and/or expected utilities.

References: ● Krzyżanowska, K.; Collins, P.J. and Hahn, U. (2017) Between a conditional's antecedent and its consequent: Discourse coherence vs. probabilistic relevance. Cognition, 164; 199-205.