Task Description

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Your task is to model human reasoning in the Wason Selection Task. For additional background information about the Wason Selection Task and experimental data please refer to the paper by Ragni, Kola, Johnson-Laird. It is sufficient if you just focus on the patterns p, pq, $pq\overline{q}$, and $p\overline{q}$ in the Wason Selection Task!

1. Please read this paper carefully, especially understand Table 2.
2. Please read the paper about modeling the Supppression Task (Ragni, Eichhorn, Kern-Isberner 2016) carefully. This paper models the *Suppression Task* with different logics, similar to what you are supposed to do for the seminar.
3. **Your task** is to model the *Wason Selection Task*. To do this, adapt your logical calculus so that it can model the patterns p, pq, $pq\overline{q}$, and $p\overline{q}$. In other words, given a conditional $p \rightarrow q$ and a human response pattern (e.g., only p), how do you have to adapt your logical inference mechanism to make it turn the card p to check if the rule holds? Do the same for the other patterns, e.g. that two cards are turned, etc. Note, that you have to tweak your inference account.

   Advice: Implement the inference system in Python and apply it to the Wason Selection Task. Change the inference mechanism accordingly. E.g., in the Weak Completion Semantics play around with the abnormality predicate (similar to Reiter). In OCF and ϵ-entailment, play with the ranking on models. In System P think about which rules can be applied.

   Please ensure that other inferences do not follow, e.g., in case of p only the p-card is turned and no other.
4. There are different types of content for the Wason Selection Task (abstract, everyday, deontic - see the paper above).
   - Can you model quantitative differences between the patterns for each content type? For instance, in the abstract case, the card p is turned more often than the cards $p\overline{q}$. Can you explain this observation based on your logic? Please answer this question for all patterns per type where the difference in Table 2 is greater than 10%.
   - Can you explain why there might be differences (given the deontic, abstract or everyday generalization task)?