

June Project on Judgment Aggregation

Homework 4

June 7, 2018

Call an agenda Φ *conjunctive* if Φ contains of a set of k premises $\{p_1, p_2, \dots, p_k\}$, which are propositional variables, and their conjunction $c \equiv (p_1 \wedge p_2 \cdots \wedge p_k)$ as a conclusion. That is,

$$\Phi = \{p_1, p_2, \dots, p_k, c, \neg p_1, \neg p_2, \dots, \neg p_k, \neg c\}$$

We say that the agents have *conclusion-oriented preferences* if they strictly prefer outcomes that agree with their truthful judgment on the conclusion and are indifferent on the rest.

Recall that in class we assumed that an agent who may want to manipulate knows exactly what the judgment sets of all the agents are (i.e., she has full information about the profile of judgments). But this assumption can often be too strong. Now, at the other extreme, suppose that an agent *does not know anything* about the judgments of the other members of her group. Then, she will still have an *incentive to manipulate* if there is one possible profile of judgments where she can achieve a strictly better outcome by lying, and she does not risk to get a strictly worse outcome by doing so, in all the other possible profiles.

Prove that for any conjunctive agenda Φ , the premise-based rule is susceptible to manipulation for the class of conclusion-oriented preferences, even when the agents have zero information about the judgments of the others (but still know their own judgment).