

Belief Merging and the Discursive Dilemma: An Argument-Based Account to Paradoxes of Judgment Aggregation

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Abstract

The aggregation of individual judgments on logically interconnected propositions into a collective decision on the same propositions is called judgment aggregation. Literature in social choice and political theory has claimed that judgment aggregation raises serious concerns. For example, consider a set of premises and a conclusion where the latter is logically equivalent to the former. When majority voting is applied to some propositions (the premises) it may give a different outcome than majority voting applied to another set of propositions (the conclusion). This problem is known as the discursive dilemma (or paradox). The discursive dilemma is a serious problem since it is not clear whether a collective outcome exists in these cases, and if it does, what it is like. Moreover, the two suggested escape-routes from the paradox --- the so-called premise-based procedure and the conclusion-based procedure --- are not, as I will show, satisfactory methods for group decision-making. In this paper I introduce a new aggregation procedure inspired by an operator defined in artificial intelligence in order to merge belief bases. The result is that we do not need to worry about paradoxical outcomes, since these arise only when inconsistent collective judgments are not ruled out from the set of possible solutions.

Keywords: Judgment aggregation - discursive dilemma - belief merging - belief fusion - paradoxes of aggregation

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