Information, interaction and manipulation in voting

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Propositions accompanying the PhD-thesis

INFORMATION, INTERACTION AND MANIPULATION IN VOTING

Yuliya A. Veselova, 2023

1. If voters possess information about winners of an election, then the probability that at least one voter has an incentive to manipulate within a coalition under plurality and Borda rule tends to 1 if the number of voters increases. (Chapter 2)

2. If voters know only the winner after tie-breaking the probability of individual manipulation equals the probability of coalitional manipulation for scoring rules. (Chapter 2)

3. If a rule is manipulable (by a group), then it is safely manipulable. (Chapter 3)

4. Runoff procedure, STV, and Copeland rule are unsafely manipulable. Plurality and veto rule are only safely manipulable. (Chapter 3)

5. For many rules there is no naive manipulation strategy that works under uncertainty about other voters' actions when only winners of the election are known. (Chapter 4)

6. Life is a continuous decision-making process. The problem is that we make decisions in the environment of other people also making decisions. - F.T. Aleskerov

7. In some cases there exist mechanisms (that are not truthful) that will perform at least as well as any truthful mechanism, and strictly better if agents are unable to compute their strategically optimal actions. - Conitzer and Sandholm, "Computational Criticisms of the Revelation Principle", 2003.

8. Most mathematical discoveries are based on a simple idea: a visual geometric construction, a new elementary inequality, etc. It is only necessary to apply in a right way this simple idea to solving a problem which seems to be inaccessible at first glance. - A.N. Kolmogorov

9. Since corrupt people unite amongst themselves to constitute a force, then honest people must do the same. - L.N. Tolstoy

10. Viam supervadet vadens. - Proverb