

Arrow's General Possibility Theorem

Individual preferences:

- Rationality Assumption: Every individual in the group has preferences that are complete and transitive.

Desirable properties of any mechanism for aggregating individual preferences:

- Universal Admissibility (U): Each individual in the group may adopt any complete and transitive preference over the alternatives under consideration.
- Pareto Optimality (P): If every member of the group prefers j to k , then the group preference must reflect a preference for j over k .
- Independence of Irrelevant Alternatives (I): If alternatives j and k stand in a particular relationship to one another in each group member's preferences, and this relationship does not change, then neither may the group preference between j and k . This is true even if individual preferences over other (irrelevant) alternatives change.
- Nondictatorship (D): There is no distinguished member of the group whose own preferences dictate the group preference, independent of the other members of the group.

Two versions of Arrow's General Possibility Theorem ("Arrow's Impossibility Theorem"):

1. If a group has two [note change from Shepsle] or more members and there are three or more alternatives, then there exists no mechanism that always translates the preferences of rational individuals into a coherent group preference and simultaneously satisfies conditions U, P, I, and D.
2. If a group has two or more members and there are three or more alternatives, then the only mechanism that always translates the preferences of rational individuals into a coherent group preference and simultaneously satisfies conditions U, P, and I is a dictatorship.