

## Reducing Manipulability

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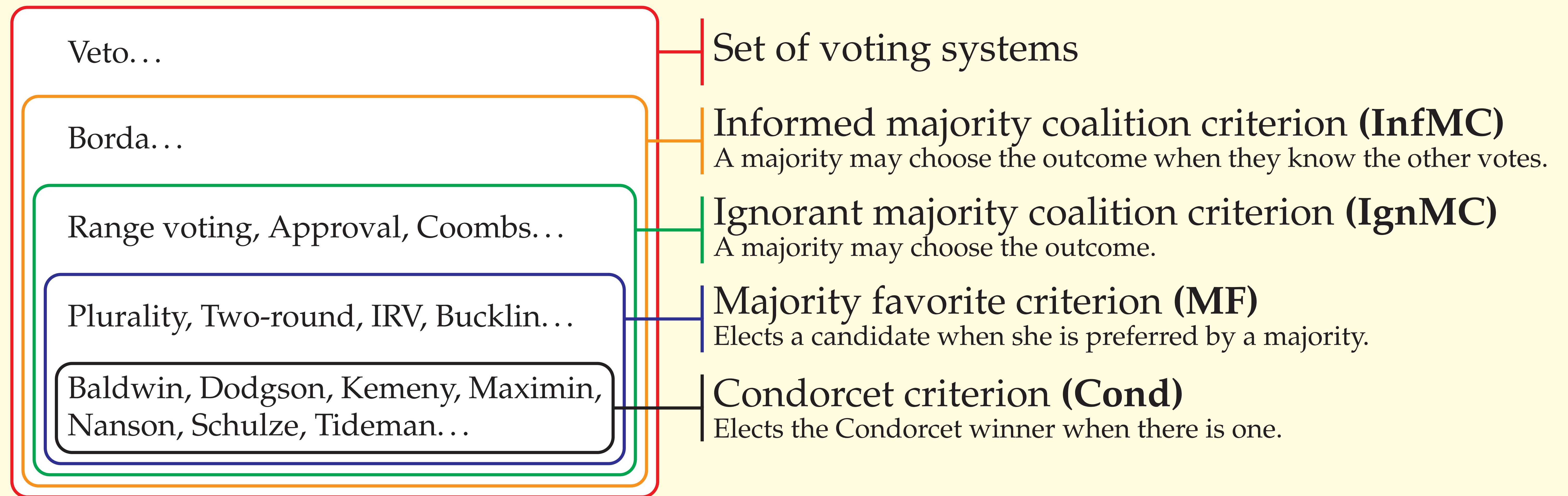
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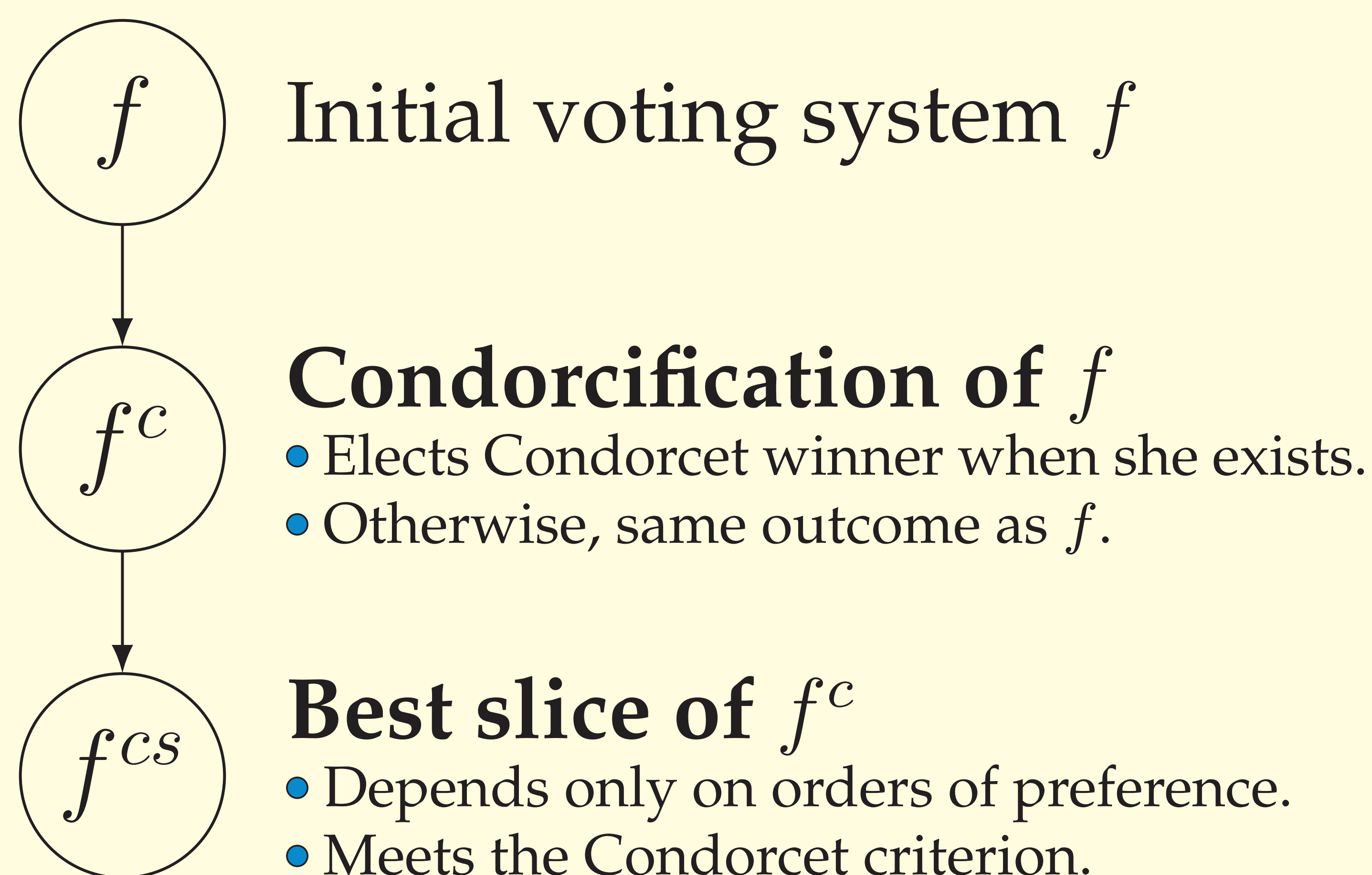
## CRITERIA FOR VOTING SYSTEMS



## GOAL: MINIMIZE THE MANIPULABILITY RATE

$$\rho(f) = \mathbb{P}(\text{voting system } f \text{ is manipulable})$$

## TRANSFORMATIONS



## CONDORCIFICATION THM.

If  $f$  meets **InfMC**:

$$\rho(f^c) \leq \rho(f).$$

## SLICING THEOREM

If voters are independent:

$$\rho(f^{cs}) \leq \rho(f^c).$$

## CONSEQUENCES

To minimize manipulability while keeping **InfMC**, one may restrict to voting systems that:

- Depend only on orders of preference,
- And meet the Condorcet criterion.