Arguing about voting rules

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Goal

- Voting rule: a systematic way of aggregating different opinions and decide
- Multiple reasonable ways of doing this

Our goal

We want to justify an election outcome by means of a sequence of simple arguments
Example

Who should win?

Voter 1: \( a > b > c \)
Voter 2: \( a > b > c \)
Voter 3: \( c > b > a \)

- Veto rule chooses \( b \)
- Borda rule chooses \( a \)
Voter 1: $a > b > c$
Voter 2: $a > b > c$
Voter 3: $c > b > a$

**System:** Take the *red subprofile*. Here, *a should win*, right?  
**User:** Yes.

**System:** To summarise, you agree that *a* should win.
Approach

- Translate axioms into propositional logic formulas
- Build a general argumentation scheme by manipulating those formulas
- In case of Borda: solve a simple system of equations to find intermediate profiles
- Display a justification for the Borda winners from any starting profile
Topic of the internship

- Programming: show a justification to a user
- Integrate into Whale4
- Research: develop other (simple) argumentation schemes
- Find out interesting profiles automatically
Further information

Contacts

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Bibliography

Thank you for your attention!
Vote for food

We have to decide which country has the best food in the universe.

Make up your mind!

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