

January 31, 2020

Defining monotone:

- In receiving a first place vote you will not drop lower in a ranked outcome
- If a candidate is moved higher in one voter's preference list, then that candidate doesn't move to a lower ranking in the outcome
- It is monotone if when a candidate received a vote they move forward instead of back
- If a voter changes their vote to increase their ranking of a particular candidate, that candidate should not rank lower in the final ranking

Which one's are monotone?

- Plurality - YES
  - Lucas' proof (definition 2): If a voter moves X up on their ballot the number of first place votes will either stay the same or increase. No other candidate will receive more first place votes, so A is doing the same or better in comparison.
- Copeland - YES
- Borda - (TBD)
- Sequential Pairwise of a fixed agenda - (TBD)
- Coombs - (TBD)

$A > B > C > D$

vs.

$A > B > C = D$

What about ties? Did D move up in this last case, even when tied for last?