

## Is “first or last” fair?

“First or last” gives 1 point for every first place vote, but subtracts 1 point for every last place vote. Supposedly this helps moderate candidates, and avoids electing total losers. Is it actually fair though?

(MW) Does FoL satisfy the majority winner fairness criterion? In other words does a majority winner (more than half of first place votes) always win according to “first-or-last”?

(ML) Does FoL satisfy the majority loser fairness criterion? In other words does a majority loser (more than half of last place votes) always lose according to “first-or-last”?

(CW) Does FoL satisfy the Condorcet winner fairness criterion? In other words does a Condorcet winner (who wins every head-to-head matchup) always win according to “first-or-last”?

(CL) Does FoL satisfy the Condorcet loser fairness criterion? In other words does a Condorcet loser (who loses every head-to-head matchup) always lose according to “first-or-last”?

(MON) Does FoL satisfy the monotonicity criterion? In other words, if a voter ranks the winner one higher on his ballot than before (leaving everyone else’s votes the same), does the old winner still win according to “first-or-last”?

(IIA) Does FoL satisfy the IIA criterion? In other words, if a voter changes the ranking of two losers, but leaves the winner’s ranking alone, does the old winner still win according to “first-or-last”? (Alternatively: if some losers get disqualified, and we use the similar version of FoL for fewer candidates, does the winner still win?)

## Is the “final four” fair?

“Final four” pits A versus B and C versus D in head-to-head matchups in round 1. In round 2 the winners from round 1 go head-to-head and the round 2 winner is declared the overall “final four” winner. Supposedly this helps Condorcet winners without the hassle of doing every single head-to-head matchup. Is it actually fair though?

(MW) Does FF satisfy the majority winner fairness criterion?

(ML) Does FF satisfy the majority loser fairness criterion?

(CW) Does FF satisfy the Condorcet winner fairness criterion?

(CL) Does FF satisfy the Condorcet loser fairness criterion?

(MON) Does FF satisfy the monotonicity criterion?

(IIA) Does FF satisfy the independence of irrelevant alternatives criterion?