

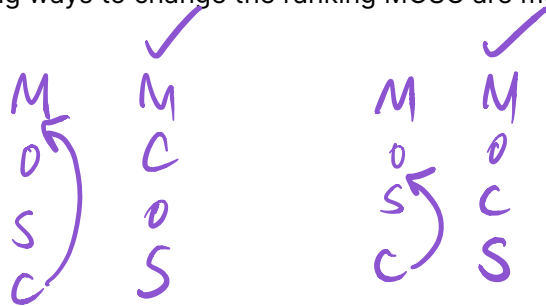
# Social Choice 3/15/21 - monotonicity

1. Suppose that for a particular preference schedule and voting method, the winner set is  $W = \{C\}$ . If one column with the ranking ABCDE was changed to AEBCD, the new winner set is  $W' = \{B\}$ . What can you conclude about whether the method is monotonic?

- (A) The method is monotonic.
  - (B) The method is not monotonic.
  - (C) This evidence doesn't tell you either way whether the method is monotonic.
- The winner switched from C to B, so to probe monotonicity we'd need a move favorable to C. This one is not! (It's favorable to E.)*

2. Which of the following ways to change the ranking MOSC are moves favorable to C? Choose all that apply.

- (A) COSM
- (B) MCOS
- (C) SCOM
- (D) OCSM
- (E) MOCS



*but COSM reshuffles the others, rather than just bumping up C.*

3. The Plurality system counts the most first-place votes. Consider the "Secondality" system, which is just like Plurality except it counts the most second-place votes. Which of the following is true, **without** instituting a tiebreaking procedure? Mark all that apply.

- (A) Secondality is Pareto-efficient.
  - (B) Secondality is single-winner.
  - (C) Secondality is strongly monotonic.
  - (D) None of the above.
- it's the opposite! A Pareto candidate would have no second place votes, so they could not win.*

*No - it's not even monotonic, because favorable moves (moving a candidate from 2<sup>nd</sup> place to 1<sup>st</sup>) can make you lose!*

*without a tiebreaker, Secondality can easily produce multiple winners.*

*|   |   |   |   |
|---|---|---|---|
| A | C | C | B |
| B | B | A | A |
| C | A | B | C |

 for example!*