An Improvement to Ranked-Choice Voting

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Testimony to The House Committee on Government Operations and Military Affairs

Ranked-choice voting (RCV) is great improvement over ordinary plurality rule

40%	25%	35%
A	B	C
B	C	B
C	A	A

three candidates: A, B, and C

- in example, 60% of voters prefer *both* B and C to A
- but under plurality rule, B and C split anti-A vote and so A wins with 40%

40%	25%	35%
A	B	C
B	C	B
C	A	A

- RCV solves this problem
  - because 60% of voters rank both B and C above A, A will not win
  - instead,
    - since no candidate gets majority of first-place votes, B is dropped
    - C then defeats A in the instant runoff

40%	25%	35%
A	B	C
B	C	B
C	A	A

- but notice that 65% of voters prefer B to C
  - and 60% prefer B to A
- so if want to respect will of the majority, B (not C) should be winner
- B is called *Condorcet winner*
  - majority of voters (65%) prefer B to C
  - majority of voters (60%) prefer B to A

40%	25%	35%
A	*B*	*C*
B	*C*	*B*
C	*A*	*A*

- can make small change to RCV to ensure that Condorcet winner like *B* won't lose election
- instead of dropping candidate with fewest *first-place votes* (as in regular RCV), drop candidate with fewest *total votes*

40%	25%	35%
A	B	C
B	C	B
C	A	A

- if a voter ranks candidate C above two other candidates, C gets two total votes from that voter
  - so each voter in 35% group contributes two total votes to C
- if a voter ranks candidate C above one other candidate, C gets one total vote from that voter
  - so each voter in 25% group contributes one total vote to C
- if a voter ranks candidate last (i.e., above no other candidates), C gets zero total votes from that voter
  - so each voter in 40% group contributes zero total votes to C

40%	25%	35%
A	B	C
B	C	B
C	A	A

in example

- C gets $35 \times 2 + 25 \times 1 = 95$ total votes
- A gets $40 \times 2 = 80$ total votes
- B gets $25 \times 2 + 75 \times 1 = 125$ total votes
- so candidate A dropped

40%	25%	35%
A	*B*	*C*
B	*C*	*B*
C	*A*	*A*

- but when *A* is dropped, the *A*-supporters (the 40% group) have their second choice elevated into first place (as in ordinary RCV)
- so rankings now look like this:

40%	25%	35%
B	*B*	*C*
C	*C*	*B*

  – 65% of voters rank *B* first

  – Thus, *B* (the Condorcet winner) is elected

- if a candidate is a Condorcet winner, there is a strong argument (based on democratic principles) that she *should* be elected
- by tweaking the rules of RCV so that the candidate with fewest total votes (rather than the fewest first-place votes) is dropped, we ensure that Condorcet winner *will* be elected