LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

OCTOBER 28, 2024

ADVENTURES IN DEMOCRATIC DECISION MAKING

PLURALITY AND ITS DISCONTENTS

Adrian Haret
a.haret@lmu.de

What is the most natural, as well as popular, way to count votes?

PLURALITY, OR FIRST-PAST-THE-POST

PREFERENCES

Let’s assume voters can rank the candidates in order of their preference.

70	20	10
a	b	c
b	c	b
c	a	a

BALLOTS

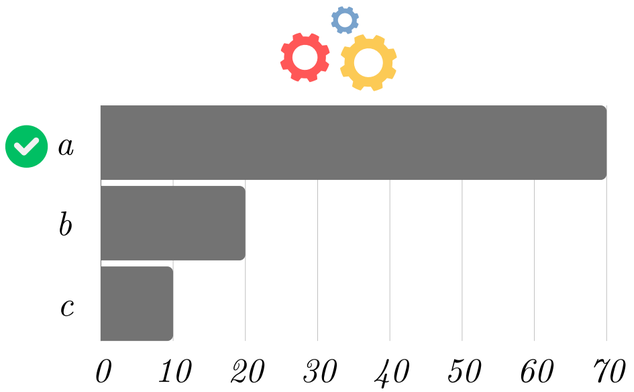
Every voter reports their top choice, i.e., favorite candidate.

70	20	10
a	b	c

WHO WINS?

Candidate with most votes.

There might be ties, but let’s assume they’re handled somehow.

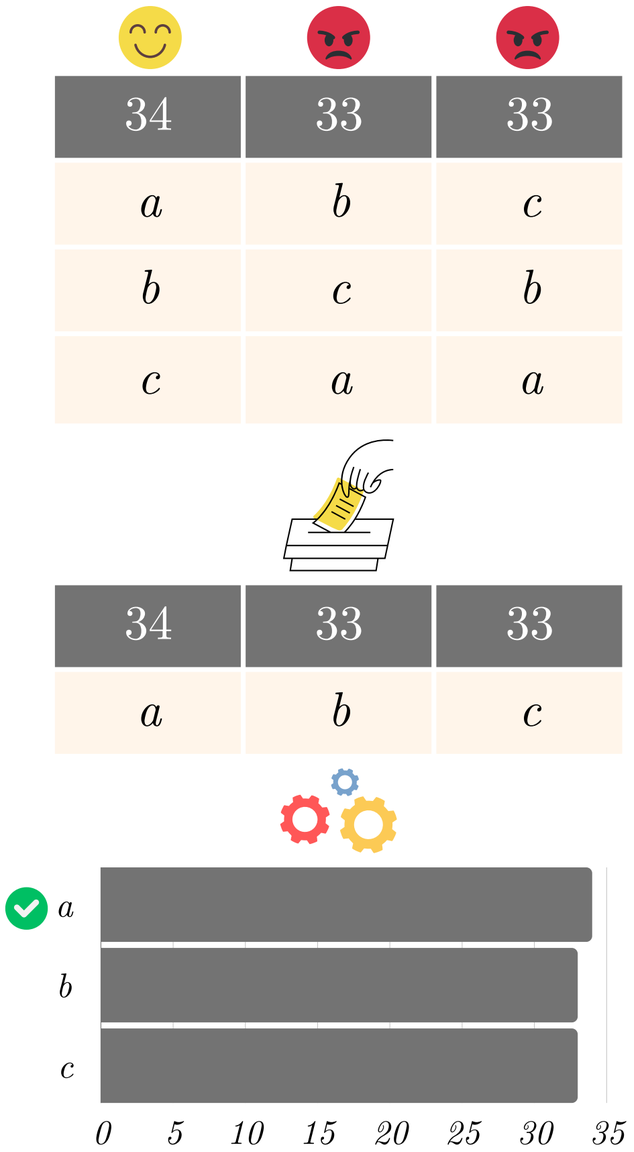


Problems with this way of picking a winner?

PLURALITY WINNER CAN BE NON-REPRESENTATIVE OF VOTERS' PREFERENCES

WORST CASE SCENARIO

A candidate wins by razor-thin margin, while hated by the rest of the electorate.



Something like this happened in the 2024 UK general election.

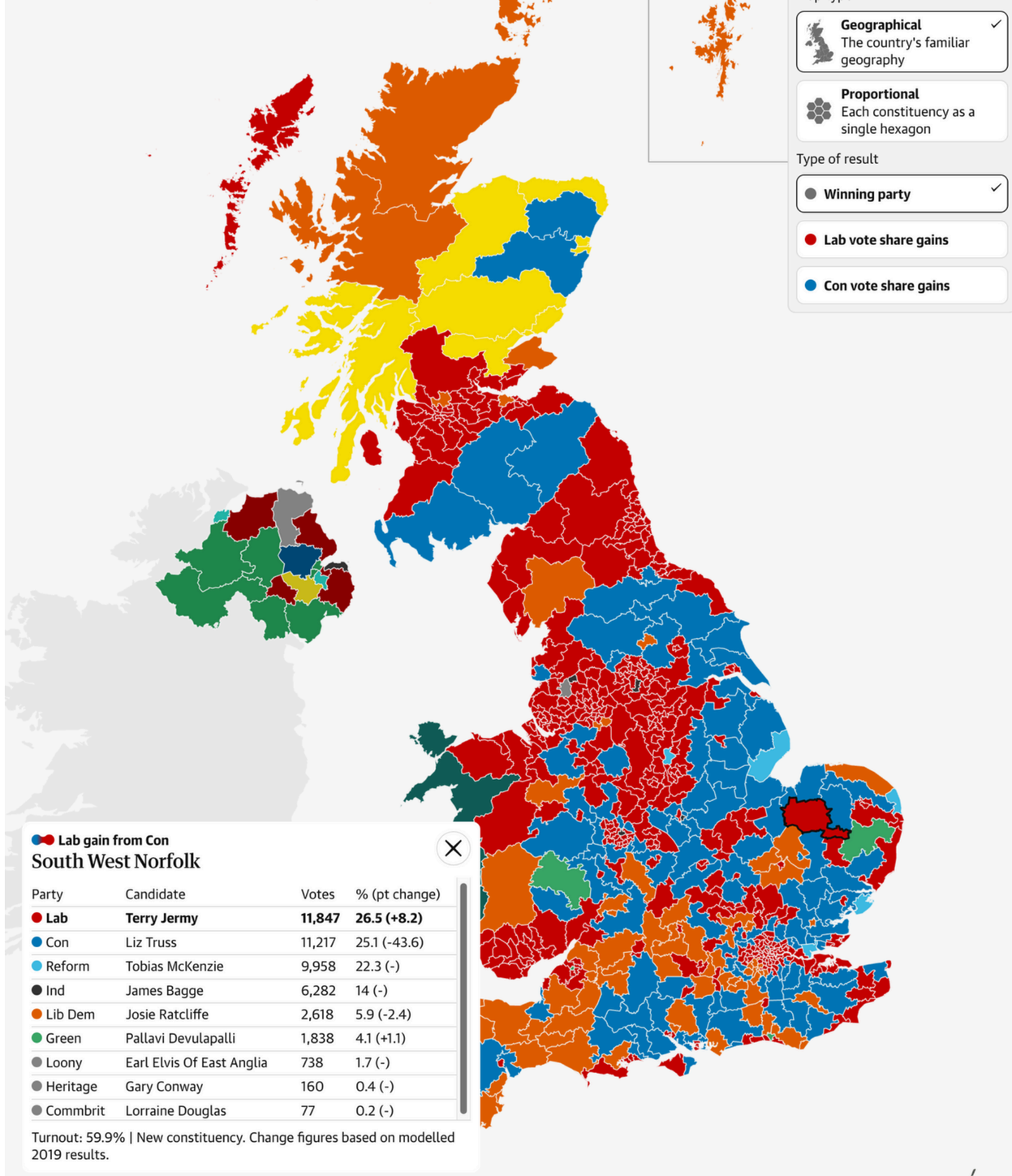
ELECTION RESULTS

SOUTH WEST NORFOLK

Labour wins the seat with 26.5% of the vote.

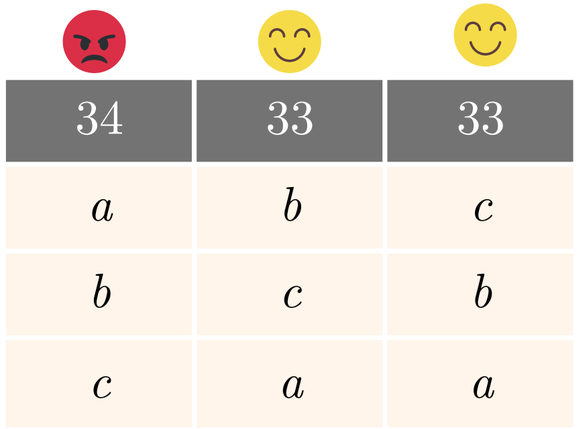
OVERALL

Labour wins 66% of seats with about 33% share of votes.



Of course, voters know this. And react accordingly.

PLURALITY CAN BE MANIPULATED

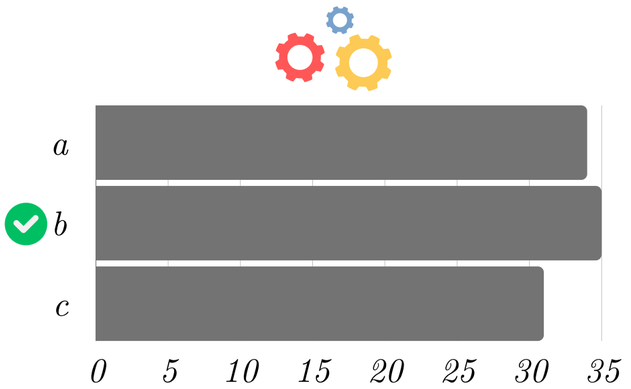


34	33	33
a	b	c
b	c	b
c	a	a

VOTERS VOTE TACTICALLY

Coalitions of voters can get a better result according to *their own preferences* by voting for someone other than their first choice.

34	33	2	31
a	b	b	c



PLINY THE YOUNGER

Something like this happened also happened in the trial for the murder of Afranius Dexter!

Szpiro, G. (2010). *Numbers Rule: The Vexing Mathematics of Democracy, from Plato to the Present*. Princeton University Press.

This is a persistent phenomenon in voting.

MAURICE DUVERGER

In the long run, *c* loses support as more and more voters migrate towards *b*.

In general, smaller parties get squeezed out of power.

Because no one bothers to vote for them.

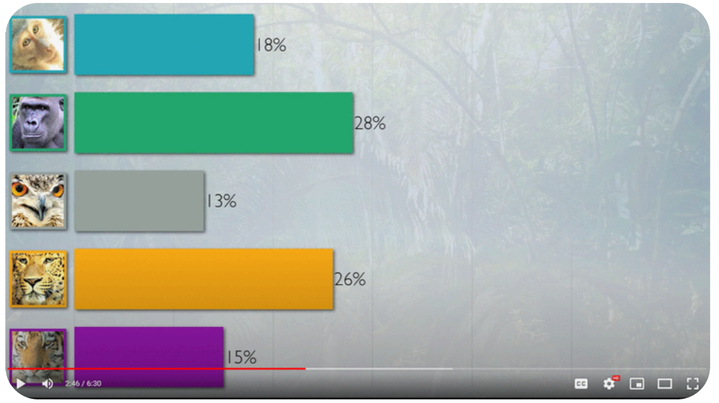
Because they don't win anyway.

A single-ballot plurality-rule election structured within single-member districts tends to favor a two party system.

CGP GREY

This is known nowadays as *Duverger's Law*.

40	40	20
a	b	c
c	c	b
b	a	a



Duverger, M. (1964). Political parties: their organization and activity in the modern state. London: Methuen.
CGP Grey (2011). Minority Rule: First Past the Post Voting. YouTube.

In a First-Past-the-Post system, any vote for a losing party is a *wasted vote*.

Perhaps we can fix this by changing the way votes are counted.

PLURALITY WITH RUNOFF

PREFERENCES

Let’s assume voters can rank the candidates in order of their preference.

BALLOTS

Every voter reports their top choice, i.e., favorite candidate.

WHO WINS?

If there is a candidate preferred by a majority, they are declared the winner.

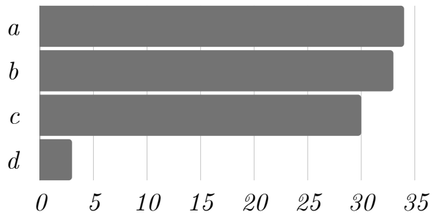
If not, hold an extra round between the candidates with the most votes.

The winner is the candidate with most votes in this second round.

ROUND 1

34	33	30	3
a	b	c	d
b	c	b	a
c	a	a	b
d	d	d	c

34	33	30	3
a	b	c	d



PLURALITY WITH RUNOFF

PREFERENCES

Let’s assume voters can rank the candidates in order of their preference.

BALLOTS

Every voter reports their top choice, i.e., favorite candidate.

WHO WINS?

If there is a candidate preferred by a majority, they are declared the winner.

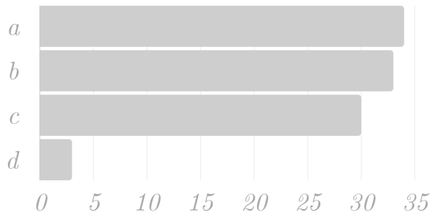
If not, hold an extra round between the candidates with the most votes.

The winner is the candidate with most votes in this second round.

ROUND 1

34	33	30	3
a	b	c	d
b	c	b	c
c	a	a	b
d	d	d	a

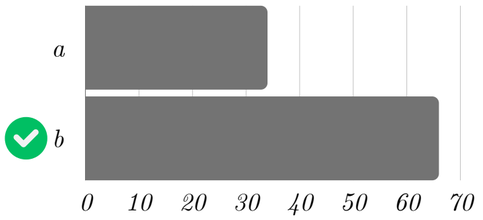
34	33	30	3
a	b	c	d



ROUND 2

34	33	30	3
a	b	c	d
b	c	b	c
c	a	a	b
d	d	d	a

34	33	30	3
a	b	b	b



Plurality with runoff is used in many countries (e.g., France, Romania) to elect the president.

Plurality with runoff is used in many countries (e.g., France, Romania) to elect the president.

It does not, however, fix the problem of low-quality winners.

PLURALITY WITH RUNOFF: BAD RESULTS

DISLIKED WINNERS

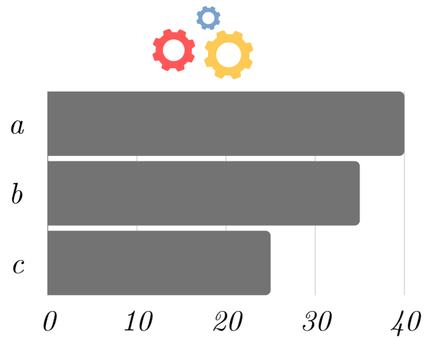
Candidate *b* is the winner after *c* is eliminated at the first round.

But 65% of the population prefers *c* to *b*!

ROUND 1

40	35	25
a	b	c
c	c	b
b	a	a

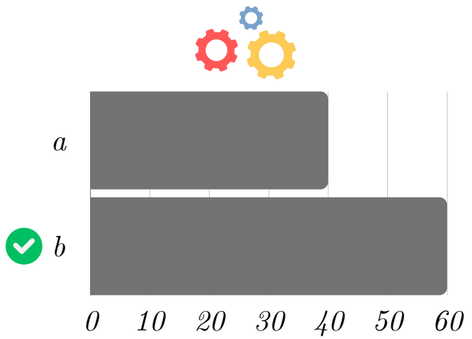
40	35	25
a	b	c



ROUND 2

40	35	25
a	b	c
c	c	b
b	a	a

40	35	25
a	b	b



And it also does not eliminate opportunities to manipulate.

PLURALITY WITH RUNOFF: MANIPULATION

DISLIKED WINNERS

With true votes, *a* gets eliminated at the first round, and *b* wins on the second round.

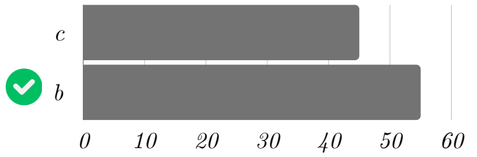
45	30	25
c	b	a
b	c	b
a	a	c

ROUND 1

45	30	25
c	b	a

ROUND 2

45	30	25
c	b	b



PLURALITY WITH RUNOFF: MANIPULATION

DISLIKED WINNERS

With true votes, *a* gets eliminated at the first round, and *b* wins on the second round.

But supporters of *c* can split their vote and make sure *b* is eliminated at the first round, making *c* the winner at the second round.

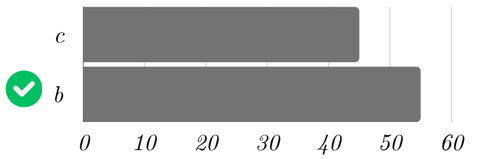
45	30	25
c	*b*	*a*
b	*c*	*b*
a	*a*	*c*

ROUND 1

45	30	25
c	*b*	*a*

ROUND 2

45	30	25
c	*b*	*b*



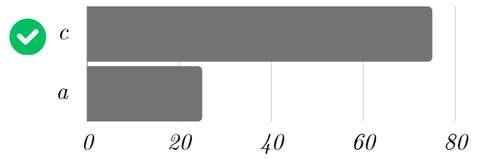
45	30	25
c	*b*	*a*
b	*c*	*b*
a	*a*	*c*

ROUND 1

39	6	30	25
c	*a*	*b*	*a*

ROUND 2

45	30	25
c	*c*	*a*



Note that this can also backfire.

PLURALITY WITH RUNOFF: MANIPULATION

DISLIKED WINNERS

With true votes, *a* gets eliminated at the first round, and *b* wins on the second round.

But supporters of *c* can split their vote and make sure *b* is eliminated at the first round, making *c* the winner at the second round.

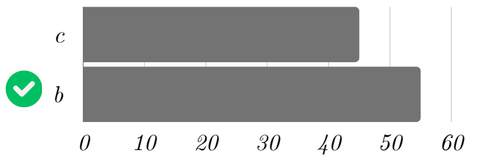
45	30	25
c	*b*	*a*
b	*c*	*b*
a	*a*	*c*

ROUND 1

45	30	25
c	*b*	*a*

ROUND 2

45	30	25
c	*b*	*b*



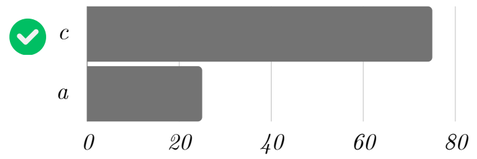
45	30	25
c	*b*	*a*
b	*c*	*b*
a	*a*	*c*

ROUND 1

39	6	30	25
c	*a*	*b*	*a*

ROUND 2

45	30	25
c	*c*	*a*



TACTICAL VOTING IN THE CONSERVATIVE PARTY

LEADERSHIP CONTEST

James Cleverly launched a last-minute and doomed attempt to stop supportive MPs from trying to manipulate the Tory leadership contest in his favour, after fearing the tactics could accidentally knock him out of the race.

James Cleverly warned MPs that tactical votes could kill his leadership hopes

Dismayed senior Tories predict second contest for head of party will be needed amid chaos after centrist's shock ejection from race

Paul Goodman: No matter who Tory members choose, the party has a mountain to climb in 2029

Shadow home secretary James Cleverly lost support in the final ballot of Tory MPs. Photograph: Dan Kitwood/Getty Images

Savage, M. (2024). James Cleverly warned MPs that tactical votes could kill his leadership hopes. *The Guardian.*

TACTICAL VOTING IN THE CONSERVATIVE PARTY

LEADERSHIP CONTEST

James Cleverly launched a last-minute and doomed attempt to stop supportive MPs from trying to manipulate the Tory leadership contest in his favour, after fearing the tactics could accidentally knock him out of the race.

Robert Jenrich (*a*), Kemi Badenoch (*b*), James Cleverly (*c*).

It seems Cleverley's supporters miscalculated and he got eliminated at the first round!

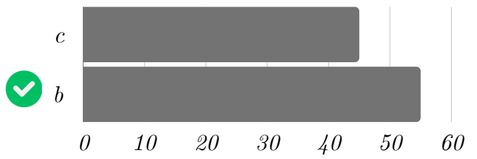
45	30	25
c	*b*	*a*
b	*c*	*b*
a	*a*	*c*

ROUND 1

45	30	25
c	*b*	*a*

ROUND 2

45	30	25
c	*b*	*b*



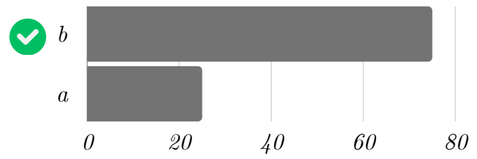
45	30	25
c	*b*	*a*
b	*c*	*b*
a	*a*	*c*

ROUND 1

29	16	30	25
c	*a*	*b*	*a*

ROUND 2

45	30	25
b	*b*	*a*



MANIPULATION OF WORLD CUP HOST VOTE

It seems that the voting rule used is a multi-round one, where the fewest votes are eliminated every round.

What is going on with the votes for Qatar between rounds 1 and 2?

Perhaps one of the voters for Qatar, anticipating a tie-break between the US and Japan in round 2, casts their vote for the US instead in order to ensure its survival to round 3.

Similarly, it seems that one supporter of Japan suspects that Japan will be kicked out at round 2 and goes for their second-best?

Either way, the changing tallies suggest tactical voting.

	ROUND 1	ROUND 2	ROUND 3	ROUND 4
QATAR	11	10	11	14
USA	3	5	6	8
SOUTH KOREA	4	5	5	
JAPAN	3	2		
AUSTRALIA	1			

2018 and 2022 FIFA World Cup bids. Wikipedia