PHPE 400
Individual and Group Decision Making

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Evaluative Voting

Approval Voting: voters can assign a single grade "approve" to the candidates. The candidates with the most approvals are the winner.

Score Voting: voters can assign any grade from a fixed set of grades to the candidates. The candidate with the greatest sum of the grades is the winner.

Majority Judgement: voters can assign any grade from a fixed set of grades to the candidates. The candidate with the greatest median grade is the winner.

Score Voting vs. Majority Judgement

Consider the following example from the SEP entry on "Voting Methods":

# Voters	a	b	c
1	4	3	1
1	4	3	2
1	2	0	3
1	2	3	4
1	1	0	2
Average:	2.6	1.8	2.4
Median:	2	3	2

Score Voting vs. Majority Judgement

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Thus, a wins according to Score Voting, while b wins according to Majority Judgement.

Score Voting vs. Majority Judgement

Here is another example from the *Majority Voting* book (p. 282) showing how Majority Judgement differs from Score Voting:

# Voters	a	b
k	20	20
1	19	20
k	19	0
Average:	slightly under 19.5	slightly over 10
Median:	19	20

Grading vs. Ranking

S. Brams and R. Potthoff (2015). *The paradox of grading systems*. Public Choice, 165, pp. 193 - 210.

Grading vs. Ranking

Suppose that the possible grades are $\{0, 1, \ldots, 20\}$

# Voters	a	b
1	20	11
1	9	0
1	9	10
Median:	9	10

Majority Judgement Winner: b

Grading vs. Ranking

Suppose that the possible grades are $\{0, 1, \ldots, 20\}$

# Voters	a	b
1	20	11
1	9	0
1	9	10
Median:	9	10

Majority Judgement Winner: b

2 out of 3 voters prefer a to b

Grading vs. Ranking

Suppose that the possible grades are $\{0, 1, \ldots, 20\}$

# Voters	a	b
50	20	11
50	9	0
1	9	10
Median:	9	10

Majority Judgement Winner: b

Grading vs. Ranking

Suppose that the possible grades are $\{0, 1, \ldots, 20\}$

# Voters	a	b
50	20	11
50	9	0
1	9	10
Median:	9	10

Majority Judgement Winner: b

100 out of 101 voters prefer a to b

Grades: $\{0, 1, 2, 3, 4, 5\}$
Candidates: $\{a, b\}$
5 Voters

# Voters	a	b
1	5	0
4	0	1
Average:	1	4/5

Grades: $\{0, 1, 2, 3, 4, 5\}$
Candidates: $\{a, b\}$
5 Voters

# Voters	a	b
1	5	0
4	0	1
Average:	1	4/5

Score Voting Winner: a

b is assigned a higher grade than a by 4 out of 5 voters

The Preference Intensity Problem

51	49
a	b
b	a

51% of the voters have a *slight* preference for a over b and 49% of the voters have a *strong* preference for b over a.

Should candidate a win the election?

The Preference Intensity Problem

80	20
a	b
b	a

80% of the voters *strictly prefer* a over b and 20% of the voters have an "*extremely strong*" preference for b over a.

Should candidate a win the election?

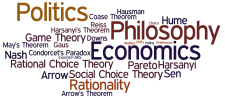
The Preference Intensity Problem

75	25
a	*b*
b	*a*

75% of the voters *strictly prefer a* over *b* and 25% of the voters *strictly prefer b* over *a*. If *a* wins, then this will cause harm to the 25% of voters that prefer *b* to *a*; and if *b* wins, this will cause some annoyance to the 75% of the voters that prefer *a* to *b*.

How do we weigh the preference of the majority while avoiding harm to the minority?

The Preference Intensity Problem



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How do we weigh the preference of the majority while avoiding harm to the minority?

- Not all questions should be decided by a vote.
- Education, deliberation, etc. to change the rankings of the enough of the 75% of the voters to ensure that *b* is the majority opinion.

Systematic Minority

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- When group barriers are permeable, the minority can occasionally belong to the winning side.
- When preferences are fully polarized and the power of a cohesive majority bloc is secure, the minority remains disenfranchised.
- Some solutions:
  - Ensure that the political districts are *fair*: `https://mggg.org/`
  - In some instances power-sharing is imposed directly (e.g., the constitution grants executive positions to specific groups, typically on the basis of their ethnic or religious identity).