

Fair Division in Theory and Practice

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Lecture 5: Approval Voting

A plurality election with 3 alternatives

Consider the following table, which shows the percentage of the population who (*approve* of) each alternative on its own:

A	B	C
60%	60%	40%

Suppose the same 60% approve of both A and B.

In a plurality election where each voter can vote for only one alternative, A and B could split their supporters, perhaps each receiving 30% of the vote. As a result, C wins, who had the least support.

Approval voting

- Each voter can *approve* of as many alternatives as he or she wishes. For example, each alternative may have a box next to his or her name, and a voter can check any number of boxes. The checked boxes represent the alternatives approved by the voter.
- The winner(s) is (are) determined by a procedure applied to the ballots.

One such simple procedure is *plurality*: sum the votes received by each alternative, choosing the one receiving the most votes.

Why?

A	B	C
60%	60%	40%

In this example, the voters supporting A and B can approve of both of them.

Other claimed advantages of approval voting:

- More expressive
 - Better than “pick 1”
 - Not as expressive as a ranked ballot
 - Increases voter turnout

More claimed advantages

- Tends to moderate candidates' positions
 - The successful candidate is appealing to many people
 - Candidates tend to emphasize similarities rather than differences
 - Reduces negative campaigning
- Adding or removing alternatives does not change the point totals of other alternatives
- Voting and tallying are simple
 - For example, compared to Borda

Approval does not satisfy the Majority Criterion

It can elect a popular 2nd-place alternative to one that could win a majority of votes:^a

	5 Voters			Voters have, but do not directly express, their ordinal preferences. Here, assume voters will approve the alternatives shown that are in bold .
	3	1	1	
1 st	A	B	C	
2 nd	B	A	A	
3 rd	C	C	B	

In this example, B wins with 4 approval votes. The majority winner would be **A**.

^aExample from Christopher Vaughen

Approval can fail to elect a Condorcet winner

	10 Voters		
	3	3	4
1 st	A	B	C
2 nd	B	A	A
3 rd	C	C	B

A is the Condorcet winner, beating **B** 7 to 3 and **C** 6 to 4. However, **B** wins by approval of 6 voters.

Approval voting does satisfy the *Pareto* condition: if everybody prefers **A** to **B**, then **B** cannot win: in such a setting, if a *rational* voter approves of **B**, that voter should also approve of **A**. Thus, **A** must receive at least as many votes as **B**, keeping **B** from winning.