

1. Rational Choice in Political Science

i) Link between the Theory of Social Choice and the Theory of Democracy:

Social Choice: a theory about how to aggregate preferences.

Voting: a method to aggregate preferences.

Democracy: different goals and different methods

based on free participation and equal participation.

Voting: a method of popular participation in government.

Riker:

Voting is at the heart of both the ideal and the method of democracy:

All elements of the democratic method are means to render voting effective and significant.

All elements of democratic ideals are moral extensions and elaborations of the method.

Democratic ends should be achieved with democratic means.

Is this possible?

Social Choice helps to answer it:

Analyzing how the world (people, institutions, ...) works, find out what kind of outputs can be obtained.

ii) Two views:

Liberal: James Madison, *The Federalist Papers*

Populist: Jean Jacques Rousseau, *Social Contract*

ii.a) The liberal interpretation of voting

The function of voting is to control officials.

Madison: democracy (or republic) is defined as a government that derives all its power directly or indirectly from the great body of the people, and it is administered by people holding their offices for a limited period.

First requirement is necessary: free participation and equal participation.

Second requirement is sufficient: election and limited tenure.

No claims are made about the quality of popular decision.

Elected politicians are agents of the electorate:

Inefficient agents will not last in office

If people are dissatisfied with them, cannot last in office.

Madison's concern: The fear of tyranny by the majority.

Heterogeneous preferences should imply shifting majorities.

Liberal principles:

voting generates liberty by restraining officials.

what is chosen by the people may be good or bad.

ii.b) The populist interpretation of voting

Popular participation implies that democratic governments embody the will of the people.

Therefore, they cannot oppress.

Rousseau: “liberty is obedience to a law we have prescribed for ourselves”

There is a social contract that creates a moral and collective body.

Participation in rule-making is necessary for liberty.

A claim on the quality of the popular decision: the output of the government is liberty.

Populist principles:

voting generates liberty by participation.

what is chosen by the people must be good.

iii) Conflict between individual values and collective choice.

The Paradox of Voting:

Three or more alternatives (or parties)

Three or more voters

There may not exist a majority winner (Condorcet winner)

Classical References:

XVIII: Condorcet

XIX: Lewis Carroll

1940: Duncan Black, *Theory of Committees and Elections*

1951: Kenneth Arrow, *Social Choice and Individual Values*

1958: Robin Farquharson, *Theory of Voting*

Suppose there are 3 alternatives: x, y, z,

Suppose there are 3 voters: 1, 2, 3.

Suppose that voters' preferences are

1: $x > y > z$

2: $y > z > x$

3: $z > x > y$

A rule of social choice: simple majority voting between two alternatives, applied successively.

The outcome is $xyzx$ because:

$C(x,y)=x$

$C(y,z)=y$

$C(x,z)=z$

Thus, although each individual preference is transitive, the voting outcome is not.

Imposing transitivity, implies dictatorship:

Starting with $C(x,y)=x$ and $C(y,z)=y$, and concluding $C(x,z)=x$ implies that person 1 is a dictator.

Can the democratic ideal be attained if the method used to attain it produces confusion?

Does one interpretation of voting makes more sense than the other one?

1. Can voting restrain officials if the outcome of voting is inconsistent?

2. If the outcome of voting is a cycle, does not an accident of the institutions, rather than popular taste select the winner?
3. If alternative laws are in a cycle, then which alternative ought to be regarded as the will of the people?
4. When the absolute good produced by voting is inconsistent, can that absolute good have any moral significance? To say that x is morally right because x beats y seems difficult to defend if z also beat x.

iii) The preservation of democracy

Multi-cameral legislature: based on different divisions of the people into constituencies.

Division between legislative and executive

Division between national and local governments

Independent judiciary

Limited tenure and regular elections

More than two political parties or decentralized parties.

IMPLICATIONS

i) Identical preferences aggregated by different methods produce different social choices.

*) Simple Majority Voting, a rule that is probably superior to many.

It is defined over two alternatives.

It is the only rule that on two alternatives satisfies:

Monotonicity: individual valuations increase, social valuation also increases.

Anonymity: does not differentiate among voters.

Neutrality: does not treat different alternatives differently.

But to enforce a binary choice is undemocratic.

Fairness requires no restriction over the number of alternatives.

For three or more alternatives:

**) Majoritarian methods are based on pairwise comparisons.

When there is no CW, the outcome of a majoritarian rule is confused.

The amendment procedure: ordered elimination

Runoff elections: plurality plus majority

The Copeland rule: Copeland index = number wins-number loses

The Schwartz rule: top cycle (the set of all alternatives that are not defeated by anyone in the set)

The Kemeny rule: a preference order closest to all individuals' preference orders

***) Positional methods produce different outcomes from majoritarian methods and among themselves.

Plurality voting

Negative plurality

Vote for 2

Negative vote for 2

Vote for n
Negative vote for n
Approval voting
Borda count

Example 1:

Suppose that there are:

3 voters with $A > B > C$

2 voters with $A > C > B$

2 voters with $B > C > A$

4 voters with $C > B > A$

then

Plurality implies that $A=5; B=2; C=4$ then $A > C > B$

Negative plurality implies that $A=-6; B=-2; C=-3$ then $B > C > A$

Borda Count (2,1,0) implies that $A=10; B=11; C=13$ then $C > B > A$

Condorcet implies that $B > A; C > A; C > B$ then C wins

Example 2:

Suppose that there are:

2 voters with $A > B > C > D$

2 voters with $A > D > C > B$

2 voters with $C > B > D > A$

3 voters with $D > B > C > A$

then

Plurality (1,0,0,0) implies that $A=4; C=2; D=3$ then $A > D > C > B$

Vote for two (1,1,0,0) implies that $A=4; B=6; C=2; D=5$ then $B > D > A > C$

Negative plurality or Vote for three (1,1,1,0) implies that $A=-5; B=-2; C=0; D=-2$ then $C > B = D > A$

Borda Count (3,2,1,0) implies that $A=12; B=14; C=13; D=15$ then $D > B > C > A$

Condorcet implies that $B > A; C > A; D > A; B > C; D > B$ then D wins

****) Utilitarian methods aggregate cardinal utility as a measure of preference.
The transformation of ordinal utility into cardinal utility is difficult to justify.

Summation of utilities
Demand-revealing methods
Multiplication of utilities

ii) The Manipulation of the Social Choice:

Criteria to evaluate voting methods:

Condorcet (failed by positional)

Consistency (failed by majoritarian)

IIA (failed by utilitarian)

Thus, no method is clearly superior to the others.

Arrow: either concentration of power or manipulation.

Since democracies do not tolerate concentration of power, then: manipulation!

Two ways:

1) Strategic Voting:

False revelation of preferences.

Gibbard's theorem: all methods of voting that produce unique outcomes and do not depend on chance are subject to manipulation by strategic voting.

It cannot be identified.

Vote-trading expands the possibilities of manipulation.

2) Control of the Agenda:

Choosing the sequence, the alternatives, the dimensions, ...

Plott's theorem: if alternatives are continuously located on two or more dimensions and utility is differentiable, then the conditions for equilibrium are highly restrictive.

McKelvey's theorem: without equilibrium every alternative is in the cycle of best outcomes.

Stable outcomes depend on institutional constraints, not on voters' preferences.

Conclusion 1:

If there are more than two alternatives, which is needed for fairness, there is a variety of methods, that lead to different outcomes. There is not one method superior to the others: each one has efficiency and/or fairness properties. The difference among them: they embody different ethical principals.

Therefore, outcomes of voting cannot be regarded as accurate aggregations of voters' values. Hence we cannot expect fairness either (nor a fair representation of the society's preferences).

Conclusion 2:

If a particular society has decided to use a particular method of voting and to define it as fair, its outcomes cannot be regarded as fair because of all the possibilities of manipulation through strategic voting or control of the agenda.

Therefore, outcomes of any particular voting method lack meaning because often they are manipulated aggregations of voters' values and because we can never know for sure whether an aggregation has been in fact manipulated.

In the real world:

Majoritarian system: **'plurality or 'single-member district':**

Used in USA, GB and Commonwealth.

USA: 435 electoral districts are defined. Each one elects one representative. It needs a majority of votes if there are two candidates or a plurality of votes if there are more than two candidates. This system over represents the winner and under represents the loser. Votes for minority parties are useless.

"If you are told that a party has obtained 10 million votes out of 40 million, it is impossible to approximate the number of seats obtained. For instance, in Great Britain 1979 the conservative party obtained 43.9% of votes, the labor party obtained 36,9%

and the liberal party obtained 13,8%. But the conservative party obtained 53,4% of seats and the liberal party obtained 11 seats which is less than 2%.”

Proportional System:

Used in many European parliamentary democracies.

Each party obtains a number of seats more or less proportional to the number of votes obtained.

It is normally based on party lists: open or closed lists of candidates.

It induces a large number of represented parties. To avoid large numbers of small parties, many countries use a minimal threshold for representation.

Majoritarian system allows for a strong control of elected representatives and representation of popular preferences is weak. A liberal system.

Proportional system allows for a stronger representation of popular preferences and offers little control of elected politicians, depending on the flexibility of the lists. A populist system.

Reference:

Riker, William H. 1982. *“Liberalism against Populism. A Confrontation Between the Theory of Democracy and the Theory of Social Choice”* Waveland Press.

	Representative democracy	Direct Democracy
Electorate size	large	small
Vote on	Representatives or delegates	Alternatives or policies
Number of alternatives	small	Large
Reasons to participate	?	clear
Reasons to be strategic	Number of parties	?
Reasons to campaign	Information transmission	None
Role of lobbies		
Examples		
	Legislative elections	Parliamentary decisions
	Municipal elections	Committee decisions
		Executive council decisions
This course topics	Chapter 2: why vote	Chapter 4: legislative bargaining
	Chapter 3: spatial model	Chapter 5: government formation
		Chapter 7: strategic behavior
	Chapter 6: participatory democracy	