Strategy and Politics: Social Choice Theory

Matt Golder

Pennsylvania State University

Notes

Democracy and Majority Rule

Many people like democracy because they believe it to be a fair way to make decisions.

One commonsense notion of fairness is that group decisions should reflect the preferences of the **majority** of group members.

Most people probably agree that a fair way to decided between two options is to choose the option that is preferred by the most people i.e. the majority.

At its heart, democracy is a system in which the **majority** rules.

Notes

Democracy and Majority Rule

Many people like democracy because they believe it to be a fair way to make decisions.

One commonsense notion of fairness is that group decisions should reflect the preferences of the **majority** of group members.

Most people probably agree that a fair way to decided between two options is to choose the option that is preferred by the most people i.e. the majority.

At its heart, democracy is a system in which the **majority** rules.

But there are many situations in which "majority rule" is a lot more complicated and less fair than our commonsense intuition would suggest.

Notes

Majority Rule and Condorcet's Paradox

Condorcet's Paradox: A set of rational individual's may not act rationally when they act as a group.

Recall that an actor is **rational** if she possesses a *complete* and *transitive* preference ordering over a set of outcomes.

An actor has a **complete** preference ordering if she can compare each pair of elements (call them x and y) in a set of outcomes in one of the following ways - either the actor prefers x to y, y to x, or she is indifferent between them.

An actor has a **transitive** preference ordering if for any x, y, and z in the set of outcomes, it is the case that if x is weakly preferred to y, and y is weakly preferred to z, then it must be the case that x is weakly preferred to z.

Notes

Condorcet's Paradox: An Example

Imagine a city council made up of three individuals that must decide whether to:

1. Increase social services (I)
2. Decrease social services (D)
3. Maintain current levels of services (C)

Figure: City Council Preferences for the Level of Social Service Provision

Left-wing Councillors	Centrist Councillors	Right-wing Councillors
$I \succ C \succ D$	$C \succ D \succ I$	$D \succ I \succ C$

Note: I = increased social service provision; D = decreased social service provision; C =maintenance of current levels of social service provision; $\succ$ = "is strictly preferred to."

Notes

Condorcet's Paradox: An Example

Let's suppose that the council employs majority rule to make its group decision.

How should the councillors vote?

Notes

Condorcet's Paradox: An Example

Let's suppose that the council employs majority rule to make its group decision.

How should the councillors vote?

One way to proceed is to hold a **round-robin tournament** that pits each alternative against every other alternative in a set of "pair-wise votes."

The winner is whichever alternative wins the most contests.

Notes

Round-Robin Tournament

Figure: Outcomes from the Round-Robin Tournament

Round	Contest	Winner	Majority that produced victory
1	Increase vs. decrease	*D*	Centrist and right
2	Current vs. increase	*I*	Left and right
3	Current vs. decrease	*C*	Left and centrist

The group can't decide! Each alternative wins one round.

Notes

Round-Robin Tournament

Figure: Outcomes from the Round-Robin Tournament

Round	Contest	Winner	Majority that produced victory
1	Increase vs. decrease	*D*	Centrist and right
2	Current vs. increase	*I*	Left and right
3	Current vs. decrease	*C*	Left and centrist

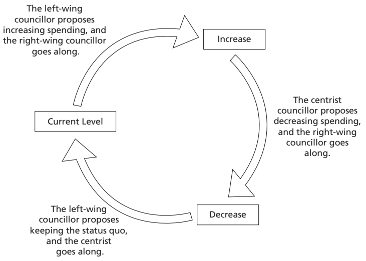
The group can't decide! Each alternative wins one round.

- A group of rational individuals is incapable of making a rational decision for the group as a whole.
- There is no "majority" to speak of – a different majority supports the winning alternative or outcome in each round.

Notes

Example of Cyclical Majorities

Figure: Cyclical Majorities



Condorcet's Paradox indicates that individual rationality is not sufficient to ensure group rationality.

Notes

Condorcet's Paradox

This example demonstrated that its possible for a set of rational individuals to form a group with intransitive preferences.

In the real world, though, we see deliberative bodies make decisions all the time and they do not appear to be stuck in the type of endless cycle that we just saw. **Why?**

Notes

Condorcet's Paradox

This example demonstrated that its possible for a set of rational individuals to form a group with intransitive preferences.

In the real world, though, we see deliberative bodies make decisions all the time and they do not appear to be stuck in the type of endless cycle that we just saw. **Why?**

On the whole, there are two broad reasons for this:

1. Preference orderings.
2. Decision-making rules.

Notes

Condorcet's Paradox

To some extent, our current example is special in the sense that it depends on the councillors having a particular set of preference orderings.

Suppose the right-wing councillor's preferences were a mirror image of the left-wing councillor's.

- His preferences are now $D > C > I$ instead of $D > I > C$.

If this is the case, then C would win both of the rounds in the round-robin tournament in which it is an alternative and would be chosen by the councillors i.e. C is a Condorcet winner.

An option is a **Condorcet winner** if it beats all other options in a series of pair-wise contests.

Notes

Condorcet's Paradox

The point here is that majority rule is not necessarily incompatible with rational group preferences.

Condorcet's Paradox only shows that it is *possible* for a group of individuals with transitive preferences to produce a group that behaves as if it has intransitive preferences.

Thus, Condorcet's Paradox erodes our confidence in the ability of majority rule to produce stable outcomes only to the extent that we expect actors to hold preferences that cause intransitivity.

So, how often are we likely to get "bad" preference orderings?

Notes

Condorcet's Paradox

Figure: Proportion of Possible Strict Preference Orderings without a Condorcet Winner

	Number of voters					
Number of alternatives	3	5	7	9	11	→ . . . Limit
3	0.056	0.069	0.075	0.078	0.080	0.088
4	0.111	0.139	0.150	0.156	0.160	0.176
5	0.160	0.200	0.215			0.251
6	0.202					0.315
Limit	1.000	1.000	1.000	1.000	1.000	1.000

In general, we cannot rely on majority rule to produce a coherent sense of what the group wants, especially if there are no institutional mechanisms for keeping the number of voters small or weeding out some of the alternatives.

Notes

Condorcet's Paradox

Figure: Proportion of Possible Strict Preference Orderings without a Condorcet Winner

Number of alternatives	Number of voters 3	5	7	9	11	→ ... Limit
3	0.056	0.069	0.075	0.078	0.080	0.088
4	0.111	0.139	0.150	0.156	0.160	0.176
5	0.160	0.200	0.215			0.251
6	0.202					0.315
↓ Limit	1.000	1.000	1.000	1.000	1.000	1.000

Many political decisions involve bargaining and hence an infinite number of alternatives!

In our example, the councillors only had three alternatives for the budget. In reality, they could have picked any share of the budget (0-100) to allocate to social service provision.

Notes

Condorcet's Paradox: Summary

Condorcet's Paradox indicates that restricting group decision making to sets of rational individuals is no guarantee that the group as a whole will exhibit rational tendencies.

Group intransitivity is unlikely when the set of feasible options is small, but it is almost certain that majority rule when applied in pair-wise contests will fail to produce a stable outcome when the set of feasible alternatives gets large.

As a result, it is impossible to say that the majority "decides" except in very restricted circumstances.

Notes

Condorcet's Paradox: Summary

The analytical insight from Condorcet's Paradox suggests that group intransitivity should be common.

But, as previously indicated, we observe a surprising amount of stability in group decision making in the real world.

The reason for this probably has to do with groups using decision-making rules (institutions) other than round-robin tournaments to make their decisions.

We will look at two alternative decision-making rules:

1. The Borda count
2. A powerful agenda setter

Notes

The Borda Count and the Reversal Paradox

The Borda count asks individuals to rank potential alternatives from their most to least preferred and then assign points to reflect this ranking.

The alternative with the most "points" wins.

Notes

The Borda Count and the Reversal Paradox

Using the same preferences as before, the Borda count does not provide a clear winner either.

Figure: Determining the Level of Social Service Provision using the Borda Count

	Points awarded			
Alternative	**Left-wing**	**Centrist**	**Right-wing**	**Borda Count total**
Increase spending	3	1	2	6
Decrease spending	1	2	3	6
Current spending	2	3	1	6

Notes

The Borda Count and the Reversal Paradox

Although the indecisiveness of the Borda count is once again an artifact of the particular preference ordering we are examining, a more troubling aspect of this decision rule can be seen if we consider the introduction of a fourth alternative.

The fourth alternative involves maintaining current spending for another year but committing to decrease spending in future years.

Figure: City Council Preferences for the Level of Social Service Provision (Four Alternatives)

Left-wing	Centrist	Right-wing
$I \succ C \succ D \succ FC$	$C \succ D \succ FC \succ I$	$D \succ FC \succ I \succ C$

Note: I = an increase in social service provision; D = a decrease in social service provision; C = a maintenance of current levels of social service provision; FC = future cuts in social service provision; $\succ$ = "is strictly preferred to."

Notes

The Borda Count: Adding a Fourth Alternative

Figure: Determining the Level of Social Service Provision using the Borda Count with a Fourth Alternative

	Points awarded			
Alternative	**Left-wing**	**Centrist**	**Right-wing**	**Borda Count total**
Increase spending	3	0	1	4
Decrease spending	1	2	3	6
Current spending	2	3	0	5
Future cuts in spending	0	1	2	3

The Borda count now produces a clear winner!

Notes

The Borda Count: Adding a Fourth Alternative

Despite the fact that the new alternative (i) receives the lowest score, (ii) is not the first choice of any councillor, and (iii) does not change the way in which any individual councillor ranks the original three alternatives, its introduction as an active alternative changes how the councillors, as a collectivity, rank the three original options.

In effect, the choice that the councillors make has been influenced by the introduction of what might be called an "irrelevant alternative."

Notes

The Borda Count

The susceptibility of the Borda count and some other decision-making rules to the introduction of irrelevant alternatives is disconcerting.

Decision rules that are not "independent of irrelevant alternatives" allow wily politicians to more easily manipulate the outcome a decision making process to produce their most preferred outcome.

Rather than making persuasive arguments about the desirability of his most preferred outcome, a politician might get her way by the imaginative introduction of an alternative that has no chance of winning, but that can influence the alternative that is ultimately chosen.

Notes

Majority Rule and an Agenda Setter

An alternative decision-making mechanism that overcomes the potential instability of majority rule in round-robin tournaments requires actors to begin by considering only a subset of the available pair-wise alternatives.

In other words, we might impose a voting agenda.

An **agenda** is a plan that determines the order in which votes occur.

- First round: I v. D
- Second round: Winner of firt round v. C.

Notes

Majority Rule and an Agenda Setter

Let's return to our city council example with three alternatives, I, D, and C.

Figure: Original Preference Ordering

Left-wing Councillors	Centrist Councillors	Right-wing Councillors
$I \succ C \succ D$	$C \succ D \succ I$	$D \succ I \succ C$

Note: I = increased social service provision; D = decreased social service provision; C =maintenance of current levels of social service provision; $\succ$ = "is strictly preferred to."

Let's assume that the councillors votes sincerely for their most preferred option when confronted with any two choices.

Notes

Majority Rule and an Agenda Setter

Figure: Original Preference Ordering

Left-wing Councillors	Centrist Councillors	Right-wing Councillors
$I \succ C \succ D$	$C \succ D \succ I$	$D \succ I \succ C$

Note: I = increased social service provision; D = decreased social service provision; C =maintenance of current levels of social service provision; $\succ$ = "is strictly preferred to."

If the first round was I v D, then D would win.

In the second round, we would have D v C, and C would win.

Notes

Majority Rule and an Agenda Setter

But should we expect all the councillors to vote sincerely?

The councillors know that the second round will involve either D v C (C wins) or I v C (I wins).

Thus, the councillors know that if D wins the first round, then the outcome will be C, and that if I wins the first round, then the outcome will be I.

This means that the first round of voting is really a contest between C and I (even if they are voting on I and D).

Notes

Majority Rule and an Agenda Setter

Put yourself in the shoes of the right-wing councillor.

If she votes for her preferred option (D) in the first round, she will end up with C (her worst preferred option) as the final outcome.

Thus, she has a strong incentive to vote strategically for I in the first round, since this will lead to I (her second preferred option) as the final outcome.

Notes

Majority Rule and an Agenda Setter

A **sincere vote** is a vote for an individual's most preferred option.

A **strategic vote** is a vote in which an individual votes in favor of a less preferred option because she believes doing so will ultimately produce a more preferred outcome.

Some analysts find strategic voting lamentable and prefer decision rules that induce sincere voting i.e. voting that constitutes a sincere revelation of an individual's preferences.

Notes

Majority Rule and an Agenda Setter

Another thing that analysts find lamentable with voting agendas is that alternative agendas can produce very different outcomes even if we hold all of the actors' preferences constant.

Figure: Pair-Wise Contests and Different Voting Agendas

Agenda	1st round	1st-round winner	2nd round	2nd-round winner	Councillor obtaining her most preferred outcome
1	*I* vs. *D*	*D*	*D* vs. *C*	*C*	Centrist councillor
2	*C* vs. *I*	*I*	*I* vs. *D*	*D*	Right-wing councillor
3	*C* vs. *D*	*C*	*C* vs. *I*	*I*	Left-wing councillor

Note: I = an increase in social service provision; *D* = a decrease in social service provision; *C* = a maintenance of current levels of social service provision.

Choosing an agenda is equivalent to choosing an outcome! This is the **"power of the agenda setter."**

Notes

Majority Rule and an Agenda Setter: Summary

In sum, it is possible to avoid the potential for group intransitivity that arises in majority-rule round-robin tournaments by imposing an agenda.

Unfortunately, the outcome of such a process is extremely sensitive to the agenda chosen, and, consequently, either of two things is likely to happen.

1. The instability of group decision making shifts from votes on outcomes to votes on the agendas expected to produce those outcomes
2. Some subset of actors is given power to control the agenda and, therefore, considerable influence over the outcome likely to be produced.

Notes

Preference Restriction

Another way in which stable outcomes might be produced despite many voters and a large number of possible alternatives is by placing restrictions on the preferences actors might have.

The **Median Voter Theorem** states that the ideal point of the median voter will win against any alternative in a pair-wise majority-rule election if

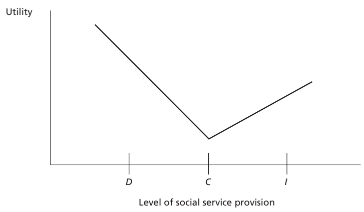
- the number of voters is odd
- voter preferences are single-peaked
- voter preferences are arrayed along a single-issue dimension
- and voters vote sincerely.

Notes

Median Voter Theorem

In our example, the utility function of the right-wing councillor was not single-peaked.

Figure: Right-Wing Councillor's Utility Function



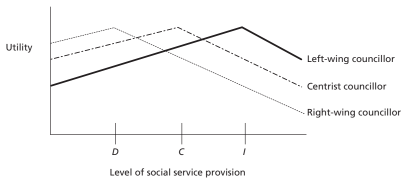
Note: D = decreased social service provision; *C* = maintenance of current levels of social service provision; *I* = increased social service provision.

Notes

Median Voter Theorem

Supposed we had placed restrictions on the preferences of our councillors.

Figure: When All Three Councillors Have Single-Peaked Preference Orderings



Note: I = the ideal point of the left-wing councillor; *C* = the ideal point of the centrist councillor; *D* = the ideal point of the right-wing councillor.

As we saw previously, C would win now.

Notes

Median Voter Theorem

Up to this point, we have allowed the councillors to choose between only three alternatives.

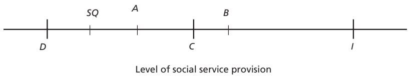
We can now examine what would happen if they could propose any level of social service spending.

Let's suppose that the councillors will vote sincerely for whichever proposal is closest to their ideal point.

Notes

Median Voter Theorem

Figure: Illustrating the Power of the Median Voter



Note: *D* = the ideal point of the right-wing councillor ; *C* = the ideal point of the centrist councillor; *I* = the ideal point of the left-wing councillor; *SQ* = status quo level of social service provision; *A* and *B* = proposals for a new level of social service provision.

Any proposals will converge on the position of the median voter i.e. C.

Notes

Median Voter Theorem

The MVT essentially shows that the difficulties we encountered with Condorcet's Paradox, such as group intransitivity and cyclical majorities, can be avoided if we are willing to both rule certain preference orderings "out of bounds" and reduce the policy space to a single dimension.

Unfortunately, neither of these restrictions is uncontroversial.

- There is nothing intrinsically troubling about individual preferences that are not single-peaked.
- Many political questions are inherently multi-dimensional.

What happens when we increase the number of dimensions?

Notes

Chaos Theorem

Suppose that the representatives of three constituencies – labor, capital, agriculture – are deciding on how to divide a pot of subsidies from the government's budget.

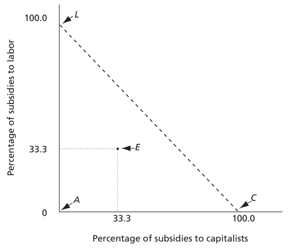
Assume that each constituency only cares about maximizing subsidies to its own constituency.

The decision-making situation can be represented by a two-dimensional policy space.

Notes

Chaos Theorem

Figure: Two-Dimensional Voting



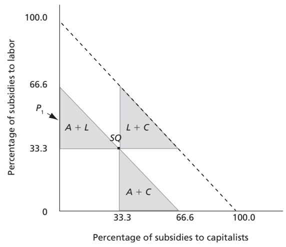
Note: At L all the subsidies go to labor; at C all the subsidies go to capital; at A all the subsidies go to agriculture; and at E the subsidies are divided equally between labor, capital, and agriculture.

If each constituency votes to allocate the subsidies by majority rule and can propose a change in the division at any time, then the problem of cyclical majorities will rear its ugly head again. **Why?**

Notes

Chaos Theorem

Figure: Two-Dimensional Voting with Winsets



Note: The three solid gray lines going through SQ (status quo) are the indifference curves for labor (L), capital (C), and agriculture (A); P_1 = proposal 1. The shaded triangles are winsets that represent alternative divisions of the subsidies that are preferred by a majority to the status quo; the majority in question is shown in each winset.

Notes

Chaos Theorem

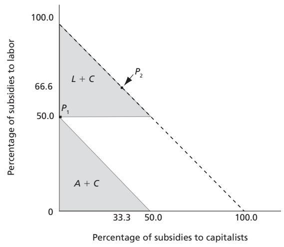
An **indifference curve** is a set of points such that an individual is indifferent between any two points in the set.

The **winset** of some alternative z is the set of alternatives that will defeat z in a pair-wise contest if everyone votes sincerely according to whatever voting rules are being used.

Notes

Chaos Theorem

Figure: Two-Dimensional Voting with a New Status Quo (P_1)

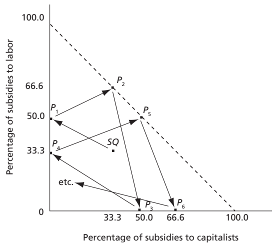


Note: The three solid gray lines going through P_1 are the indifference curves for labor (L), capital (C), and agriculture (A). The shaded triangles are winsets that represent alternative divisions of the subsidies that are preferred by a majority to the status quo; the majority in question is shown in each winset.

Notes

Chaos Theorem

Figure: Two-Dimensional Voting with Cyclical Majorities



Note: SQ = original status quo; P_1 = proposal that beats SQ; P_2 = proposal that beats P_1; P_3 = proposal that beats P_2; P_4 = proposal that beats P_3, and so on.

Notes

Chaos Theorem

The **Chaos Theorem** states that if there are two or more issue dimensions and three or more voters with preferences in the issue space who all vote sincerely, then except in the case of a rare distribution of ideal points, there will be no Condorcet winner.

As a result, whoever controls the order of voting can determine the final outcome.

Notes

Chaos Theorem

Like Condorcet's Paradox, the Chaos Theorem suggests that unless we are lucky enough to have a set of actors who hold preferences that do not led to cyclical majorities, then either of two things will happen:

1. The decision-making process will be indeterminate and policy outcomes hopelessly unstable.
2. There will exist an actor – the agenda setter – with the power to determine the order of votes in such a way that she can produce her most favored outcome.

Notes

Chaos Theorem

In fact, in the absence of institutions that provide an actor with agenda-setting powers, stable outcomes are even less likely to occur in the circumstances covered by the Chaos Theorem than those covered by Condorcet's Paradox.

This is because the set of preferences that prevent majority cycling in two or more dimensions are *extremely* rare and special. **What are they?**

Notes

Chaos Theorem

In fact, in the absence of institutions that provide an actor with agenda-setting powers, stable outcomes are even less likely to occur in the circumstances covered by the Chaos Theorem than those covered by Condorcet's Paradox.

This is because the set of preferences that prevent majority cycling in two or more dimensions are *extremely* rare and special. **What are they?**

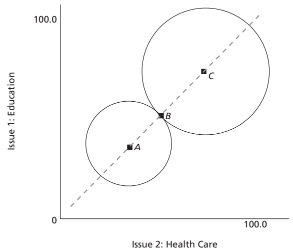
One way to avoid instability in two-dimensional voting is if the individuals in a group have radially symmetric preferences.

Radially symmetric preferences involves having a single individual be the median voter in both dimensions and all of the other voters be aligned symmetrically around this person.

Notes

Stability in Two-Dimensional Majority-Rule Voting

Figure: Stability in Two-Dimensional Voting



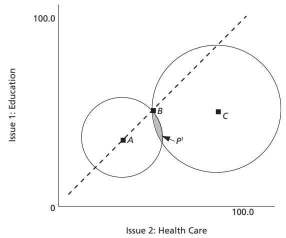
Note: Voter *B*'s position = the status quo policy; the two circles = the indifference curves for voters *A* and *C* with respect to the status quo policy *B*.

If B's ideal point were to ever become the status quo, no majority could displace it – B is the equilibrium in this two-dimensional majority-rule voting scenario.

Notes

(In)Stability in Two-Dimensional Majority-Rule Voting

Figure: Instability in Two-Dimensional Voting



Note: Voter *B*'s position = the status quo policy; the two circles = the indifference curves for voters *A* and *C* with respect to the status quo policy; the shaded oval area = the winset of *B* and represents the alternative policy outcomes that voters *A* and *C* prefer to voter *B*'s position. P^1 = a policy proposal that would defeat the status quo policy (*B*) in a majority rule vote.

But stability is not likely in two dimensions. If anyone's ideal point shifts even a bit, then the instability of the Chaos Theorem reappears.

Notes

Summary So Far

Condorcet's Paradox shows that a set of rational individuals can form a group that is incapable of choosing rationally in round-robin tournaments – we get majority cycles.

Notes

Summary So Far

Condorcet's Paradox shows that a set of rational individuals can form a group that is incapable of choosing rationally in round-robin tournaments – we get majority cycles.

Alternative voting schemes like the Borda count might allow clear winners to emerge in some cases, but the outcomes that are produced are not necessarily robust.

Notes

Summary So Far

Condorcet's Paradox shows that a set of rational individuals can form a group that is incapable of choosing rationally in round-robin tournaments – we get majority cycles.

Alternative voting schemes like the Borda count might allow clear winners to emerge in some cases, but the outcomes that are produced are not necessarily robust.

If round-robin tournaments are replaced by "single elimination" tournaments that form a voting agenda, the cyclical majorities may be avoided but we also saw that whoever controls the agenda could dictate the outcome.

Notes

Summary So Far

Condorcet's Paradox shows that a set of rational individuals can form a group that is incapable of choosing rationally in round-robin tournaments – we get majority cycles.

Alternative voting schemes like the Borda count might allow clear winners to emerge in some cases, but the outcomes that are produced are not necessarily robust.

If round-robin tournaments are replaced by "single elimination" tournaments that form a voting agenda, the cyclical majorities may be avoided but we also saw that whoever controls the agenda could dictate the outcome.

The problem of instability could be overcome if the question to be decided can be thought of as a single-issue dimension *and* if each voter has single-peaked preferences.

Notes

Summary So Far

Condorcet's Paradox shows that a set of rational individuals can form a group that is incapable of choosing rationally in round-robin tournaments – we get majority cycles.

Alternative voting schemes like the Borda count might allow clear winners to emerge in some cases, but the outcomes that are produced are not necessarily robust.

If round-robin tournaments are replaced by "single elimination" tournaments that form a voting agenda, the cyclical majorities may be avoided but we also saw that whoever controls the agenda could dictate the outcome.

The problem of instability could be overcome if the question to be decided can be thought of as a single-issue dimension *and* if each voter has single-peaked preferences.

But why should we restrict people's preferences and what about multi-dimensional problems?

Notes

Problems with Majority Rule

Each of these complications with majority rule raises questions about the ethical appeal of democracy – understood as majority rule – as a mechanism for making group decisions.

Should we just drop majority rule?

Notes

Problems with Majority Rule

Each of these complications with majority rule raises questions about the ethical appeal of democracy – understood as majority rule – as a mechanism for making group decisions.

Should we just drop majority rule?

Kenneth Arrow showed that these problems with majority rule are, in some ways, special cases of a more fundamental problem.

Arrow's Theorem demonstrates that it is impossible to design any decision-making system – not just majority rule – for aggregating the preferences of a set of individuals that can guarantee producing a rational outcome while simultaneously meeting what he argued was a minimal standard of fairness.

Notes

Arrow's Fairness Conditions

Arrow presented four fairness conditions that he believed all decision-making processes should meet.

The **non-dictatorship condition** states that there must be no individual who fully determines the outcome of the group decision-making process in disregard of the preferences of the other group members.

Although it is possible that a dictator would be benevolent and choose an outcome that benefits the group, it is clear that a mechanism that allows a single individual to determine group outcomes is inherently unfair.

Notes

Arrow's Fairness Conditions

Arrow presented four fairness conditions that he believed all decision-making processes should meet.

The **universal admissibility condition** states that individuals can adopt any rational preference ordering over the available alternatives.

The **unanimity or pareto optimality condition** states that if all individuals in a group prefer x to y, then the group preferences must reflect a preference for x to y as well.

Basically, the unanimity condition states that if everybody prefers x to y, the group should not choose y if x is available.

Notes

Arrow's Fairness Conditions

Arrow presented four fairness conditions that he believed all decision-making processes should meet.

The **independence of irrelevant alternatives condition** states that group choice should be unperturbed by changes in the rankings of irrelevant alternatives.

Suppose that, when confronted with a choice between x, y, and z, a group prefers x to y.

The IIA condition states that if one individual alters their ranking of z, then the group must still prefer x to y.

Notes

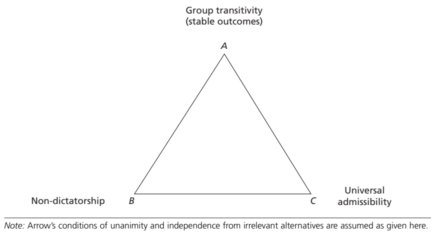
Arrow's Theorem

Arrow's Theorem states that every decision-making mechanism that we could possibly design must sacrifice at least one of Arrow's fairness conditions – non-dictatorship, universal admissibility, unanimity, or independence of irrelevant alternatives – if it is to guarantee group transitivity and, hence, stable outcomes.

Notes

Implications of Arrow's Theorem

Figure: Arrow's Institutional Trilemma



Suppose we take Arrow's conditions of unanimity and IIA as uncontroversial, then we face an institutional "trilemma" between stable outcomes, universal admissibility, and non-dictatorship.

Notes

Implications of Arrow's Theorem

Arrow's Theorem basically states that when designing institutions, we can choose one and only one side of the triangle.

If we want group rationality and stable outcomes, then we must give up either non-dictatorship or universal admissibility.

If we want to avoid dictatorship, then we must give up group rationality or universal admissibility.

If we hold individual preferences inviolable, then we must give up non-dictatorship or group rationality.

Notes

Implications of Arrow's Theorem

Arrow's Theorem shows that it is, at the very least, difficult to interpret the outcome of any group decision-making process as necessarily reflecting the will of the group.

When a group comes to a clear decision, it may mean that individual preferences lined up in a way that allowed for a clear outcome that represented, in some way, the desires of a large portion of the group.

But it may also mean that individuals with inconvenient preferences were excluded from the process, or that some actor exercised agenda control.

In such cases, outcomes may reflect the interest of some powerful subset of the group rather than the preferences of the group as a whole, or even some majority of the group.

Notes

Implications of Arrow's Theorem

Every decision-making mechanism must grapple with the trade-offs posed by Arrow's Theorem, and every system of government represents a collection of such decision-making mechanisms.

Thus, we can evaluate different systems of government in terms of how their decision-making mechanisms tend to resolve the trade-offs between group rationality and Arrow's fairness criteria.

There is no perfect set of decision-making institutions.

Notes

Legislative Intent

A piece of legislation cannot cover all conceivable contingencies for which it might be relevant.

This requires that in any specific instance a judge, bureaucrat, or lawyer must determine whether a specific statute is applicable or not.

Judges often ask, "What did Congress *intend* in passing this law?"

Notes

Legislative Intent

A piece of legislation cannot cover all conceivable contingencies for which it might be relevant.

This requires that in any specific instance a judge, bureaucrat, or lawyer must determine whether a specific statute is applicable or not.

Judges often ask, "What did Congress *intend* in passing this law?"

On the whole, Liberals (in the American sense) have developed principles of statutory interpretation to enable broad meaning to be read into acts of Congress, whereas conservatives insist on requiring judges to stick to the plain meaning of the statutory language.

But who is right?

Notes

Legislative Intent

Short of appealing to our own prejudices and policy preferences, we can provide an analytical perspective based on Arrow's Theorem.

Arrow's Theorem cautions against assigning individual properties to group. Individuals are rational, but a group is not.

If this is true, how can one make reference to the **intent** of a group?

Legislators may have an intention, but a *legislature* does not.

Because groups differ from individuals and may be incoherent, legislative intent is an oxymoron!

Notes

The Daily Show Does Social Choice Theory

The Daily Show Does Social Choice Theory in Five Minutes here

Notes