The Paradox of Voting

ECO1028 — Why Do Rational People Vote?

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Outline

Introduction & Prerequisites

The Central Puzzle: The Rationality Gap

Schumpeter (1942): The "Primitive" Voter

> *"...the typical citizen drops down to a lower level of mental performance as soon as he enters the political field. He argues and analyzes in a way which he would readily recognize as infantile within the sphere of his real interests. He becomes a primitive again."*

The "Psychic Economy" of Politics:

- Political questions feel like "fictitious" leisure-hour interests
- Not like a "business proposition" - dangers seem far off
- Citizens expend less disciplined effort on mastering a political problem than on a game of bridge

Think about it: Why might you spend weeks researching a €1,000 phone but only 10 minutes researching a candidate who manages billions in taxes?

What You Need to Know

Four prerequisite pillars:

1. **Cost-Benefit Analysis**
   - People weigh costs against benefits before acting
   - Opportunity cost: voting time = time not spent elsewhere
2. **Probability & Pivotality**
   - Your vote only matters if it changes the outcome
   - 10-person lunch vote vs. 150M-person election
3. **Information Costs**
   - Learning about politics takes time and mental effort
   - Return on investment problem
4. **Winner-Take-All Systems**
   - 50.1% wins everything, 49.9% wins nothing
   - First-Past-The-Post amplifies the paradox

Diagnostic Check

Test your understanding:

Question 1: €100 buried in a 10-acre field. Takes 5 hours to find. Do you dig?

- Tests: Cost-benefit logic

Question 2: Why do people buy lottery tickets when expected value is negative?

- Tests: Expressive utility vs. instrumental utility

Question 3: Can you name a US Presidential election decided by exactly one vote?

- Spoiler: There hasn't been one
- In electorate of 100M: $P \approx 0.00006$ (six in 100,000)
- Your vote is more likely to be decisive if you flip a coin 14 times and get all heads ($1/2^{14} \approx 0.000061$)

Historical Development

Intellectual Precursors

Knut Wicksell (1896):

- "Just taxation" and unanimity rules
- How can we design political institutions that get voluntary agreement?

Duncan Black (1948):

- Group decision-making theory
- Developed the median voter theorem

Kenneth Arrow (1951):

- Impossibility theorem: No perfect voting system
- Nobel Prize 1972

But none of these directly addressed *why* people vote

The Breakthrough: Downs (1957)

Anthony Downs, An Economic Theory of Democracy

Key innovation:

- Applied economic reasoning to political behaviour
- Parties = firms competing for votes
- Voters = consumers maximizing utility

The rational voter model:

- Voters calculate expected utilities from each candidate
- Vote for candidate promising highest expected utility
- But immediately recognized the paradox: P is tiny

Downs *identified* the paradox but didn't fully resolve it

The Golden Age: 1960s–1980s

Mancur Olson (1965): *The Logic of Collective Action*

- Why small groups organize and large groups free-ride
- Voting as collective action problem

Gordon Tullock (1967):

- First formal analysis of the paradox
- Introduced the psychic income term (negative cost)

Riker & Ordeshook (A Theory of the Calculus of Voting, 1968):

- Formalized the $R = PB + D - C$ equation
- First major empirical test using survey data
- Found D (civic duty) dominates

Continued Development: 1970s–1990s

Ferejohn & Fiorina (The paradox of not voting, 1974; Closeness counts, 1975):

- Minimax regret strategy
- "Rescuing rational choice theorists from this embarrassing predicament"

Fiorina (The voting decision, 1976):

- Expressive voting hypothesis
- Voting as consumption, not investment

Ashenfelter & Kelley (Determinants of participation, 1975):

- Large-scale empirical study (1,893 voters) $\rightarrow$ Confirmed importance of D and C

1980s–1990s:

- Aggregate data studies (Foster 1984, Patterson & Caldeira 1983)
- International comparisons (Jackman, 1987)

Modern Developments: 2000s–Present

Experimental evidence:

- DellaVigna et al. (2017): Social image concerns
- Gerber et al. (2008): Social pressure effects
- Blais & Young (1999): Habit vs. rational calculation

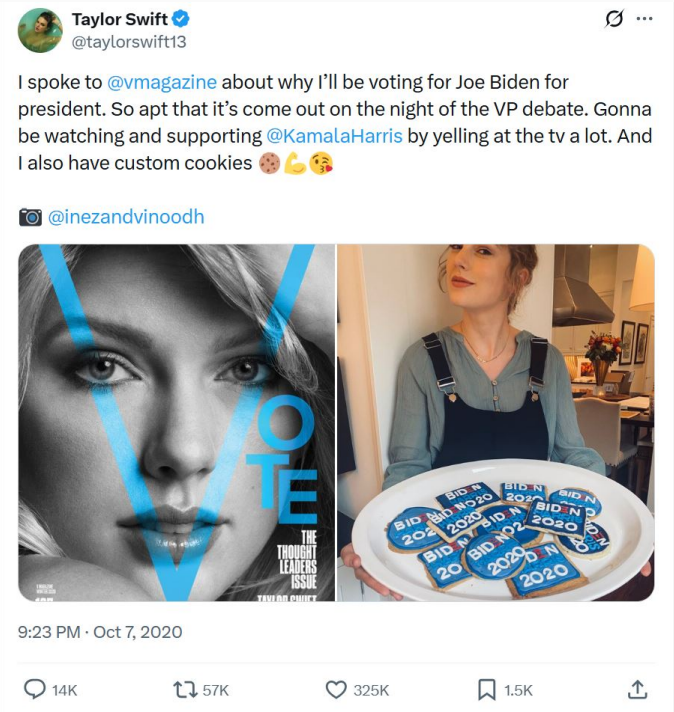
New theoretical approaches:

- behavioural economics integration
- Evolutionary explanations
- Group-based voting models

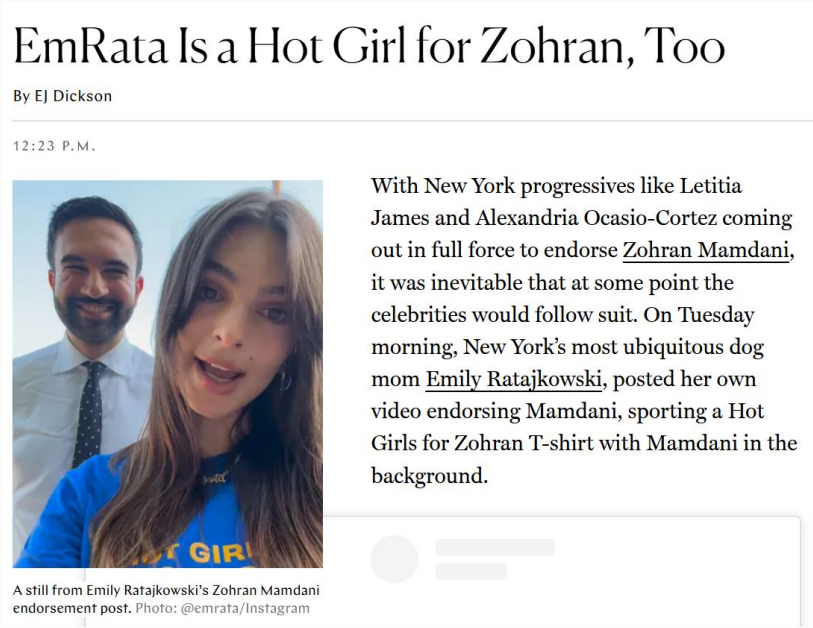
Current state:

- No consensus solution
- Multiple explanations coexist
- Focus shifted to: *When* do different motivations dominate?

Celebrity Political Endorsements



Taylor Swift endorsing Joe Biden in 2020



Zohran Mamdani's social media advocacy

Question: How does social media change the expressive benefits of voting?

Social Media & the Amplification of Expressive Benefits

How social media has changed the calculus:

- **The "I Voted" sticker phenomenon - "clout farming"**
  - Voting becomes a public performance, not a private act
  - Instagram/TikTok posts broadcasting political participation
  - Massively increases the audience for your expressive signal
- **Celebrity political endorsements**
  - Taylor Swift endorsing Democratic candidates
  - Zohran Mamdani's social media advocacy
  - Influencers making voting "cool" or socially desirable
- **Impact on the D term:**
  - Social media amplifies psychic benefits of civic duty
  - Increases social pressure ("Did you vote?")
  - Makes abstention more costly (social shame)
  - DellaVigna et al. (2017): People vote to signal to others

Modern twist: D might now include *social media signaling value*

The Rational Voter Model

The Two-Phase Voting Process

Voting isn't a single calculation, but a two-step process:

1. **Phase 1: The Evaluation Phase (The "Who")**
   - Comparing candidates to determine which outcome is better.
   - **Output:** The Utility Differential (B).
2. **Phase 2: The Participation Phase (The "Whether")**
   - Deciding if the benefit of voting justifies the personal cost.
   - **Output:** The decision to vote or abstain (R).

The Paradox of Voting exists entirely within Phase 2.

Key Variables

Notation used throughout:

- P = Probability your vote is pivotal (decisive)
- p = Expected fraction of votes for your preferred candidate ($0 \leq p \leq 1$)
- B = Benefit differential between candidates
- C = Cost of voting
- D = Civic duty / psychic benefit
- N = Total number of voters

Phase 1: The Evaluation Phase

Goal: Determine which candidate promises the most utility.

The voter envisages the "streams of utility" derived from policies promised by each candidate.

The Calculation of B:

$$B = E(U_i|P_{a \text{ wins}}) - E(U_i|P_{b \text{ wins}})$$

- If $B > 0$, the voter prefers Candidate a.
- If $B < 0$, the voter prefers Candidate b.
- If $B = 0$, the voter is indifferent.

Note: B is a measure of the *stakes* of the election for that individual.

Phase 2: The Participation Phase

Goal: Determine if casting a ballot is a rational investment.

Once a preference (B) is established, the voter evaluates the act of voting as a purely instrumental act.

$$R = (P \times B) - C$$

where R = net return from voting

Individual i votes if and only if $R > 0$

This model assumes the only purpose of voting is to influence the outcome.

Breaking Down $R = PB - C$

P = Probability your vote is decisive (Pivotality)

- The chance your vote breaks or creates a tie.

B = Utility benefit from your preferred candidate winning

- Calculated in Phase 1; represents the differential utility streams.

C = Cost of voting

- Time, effort, opportunity cost, or even mildly bad weather.

Expected benefit of voting $= PB - C$

Calculating P: The Ball-Drawing Model

Your vote matters only in two specific scenarios:

- **Scenario 1 (Breaking a tie):** All other votes are exactly tied. Your vote is the decider (weighted at 100%).
- **Scenario 2 (Creating a tie):** Your preferred candidate loses by one vote. Your vote forces a draw (weighted at 50% because it leads to a 50/50 chance of eventually winning).

The Logic (Mueller, Section 14.1.1):

- Think of each voter as drawing a ball from a bag.
- Fraction p are labeled "Candidate 1" and $(1-p)$ are labeled "Candidate 2".
- For odd N, the probability P of being instrumental is:

$$P = \frac{3e^{-2(N-1)(p-\frac{1}{2})^2}}{2\sqrt{2\pi(N-1)}}$$

Understanding the Formula: Key Assumptions

What does the model assume?

1. **Independence:** Each voter votes independently
   - No coordination, no social pressure
   - Questionable assumption (families, social networks)
2. **Knowledge of p:** You have beliefs about the vote share
   - From pre-election polls, media coverage, historical data
   - But polls have sampling error!
3. **Large N:** Normal approximation works
   - Valid for national elections
   - Less valid for small local elections

Key insight: The formula tells us what P *would be* given your beliefs about p, not what P actually is.

What Does This Formula Tell Us?

$$P = \frac{3e^{-2(N-1)(p-\frac{1}{2})^2}}{2\sqrt{2\pi(N-1)}}$$

Key insights:

1. P falls exponentially as N increases
2. P falls exponentially as p diverges from 0.5
3. Even in best case ($p = 0.5$, 100M voters): $P = 0.00006$

The Reality: B must be roughly 16,000 times greater than C for a rational vote to make sense.

The "p Problem"
But how do voters know p on election day? They don't! Even polls have error. This is a fundamental weakness of the model that we'll revisit later.

How Sensitive is P to Changes in p?

Example: 100 million voters

Vote Split (p)	**Probability P**
50-50 ($p = 0.50$)	0.00006 (6 in 100,000)
51-49 ($p = 0.51$)	0.000006 (6 in 1,000,000)
52-48 ($p = 0.52$)	≈ 0 (essentially zero)
60-40 ($p = 0.60$)	≈ 0 (completely negligible)

Key takeaway: even slight movements away from 50-50 make P plummet. Only in historically close elections does P have any non-negligible value - and even then it's tiny!

This is why Ashenfelter & Kelley's finding is important: the difference between thinking an election is close vs. a landslide is enormous for perceived P.

The Paradox Revealed

If $P \approx 0$ and $C > 0$, then:

$$(P \times B) - C < 0$$

Logical conclusion of Phase 2:

- No rational, self-interested person should ever vote.
- Cost of voting (C) always exceeds the instrumental expected benefit (PB).

But millions of people DO vote. Why?

This is the paradox of voting.

Mueller's Critical Assessment

Three sophisticated "fixes" to save rational choice:

Strategy	**Logic**	**Mueller's Critique**
Taste for Voting (D)	People vote to satisfy a "civic itch" (psychic gains)	Makes theory tautological; robs it of predictive power
Game of Cat & Mouse	If all stay home, one vote wins	With large electorates, still need large D
Minimax-Regret	Minimize maximum regret	Implies bizarre behaviour; inconsistent with other domains

Common problem: each "works" but at the cost of making the theory unfalsifiable or requiring auxiliary assumptions

Solution 1a: A Taste for Voting

Riker & Ordeshook (1968): Add a "D" term

$$R = PB + D - C$$

D = **Psychic benefit from act of voting itself:**

- Civic duty, patriotic feeling, sense of participation
- "Complying with the ethic of voting"
- Affirming allegiance to the political system
- NOT dependent on whether your candidate wins
- Vote if $D - C > 0$ (since $PB \approx 0$)

This works! But at what cost to theory?

The Epicycle Problem

The problem with adding D

This is a bit of a fudge. Any hypothesis can fit any data if you add enough auxiliary assumptions.

Example from physics:

- Ptolemaic astronomy: Earth at center, planets orbit in circles
- Observations didn't fit? Add "epicycles" - circles on circles
- Could fit any observation, but had no predictive power

Same problem here:

- If civic duty explains voting, what else might it explain?
- Does civic duty guide candidate choice too?
- When does self-interest override civic duty?
- Without a theory of D, we've just *named* the problem

Solution 1b: Voting as a Game

If everyone reasons that voting is irrational...

- Then no one would vote
- But then *any* voter could determine the outcome!
- So whether it's rational to abstain depends on others' decisions

Game-theoretic approach (Ledyard 1981, Palfrey & Rosenthal 1983):

- Model as n-person noncooperative game (rational players act in their self-interest)
- Each person's strategy depends on expectations about others
- Under some assumptions, equilibria exist with positive turnout

But:

- With large electorates and uncertain costs
- Rational individual votes only if psychic benefits exceed costs
- We're back to needing large D

Solution 1c: Minimax Regret

Ferejohn & Fiorina (1974): Different decision rule

Instead of weighing events by probability:

- Give all events *equal weight*
- Calculate "regret" for each strategy/state combination
- Regret = loss from choosing this strategy vs. best alternative
- Choose strategy that minimizes maximum regret

Key insight:

- Under this rule, only B is important, not P
- Probability becomes irrelevant to the decision
- Extremely conservative: avoid worst-case scenario at all costs

The Minimax Regret Matrix

Regret for each strategy/state combination:

Strategy	S_I (Vote Irrelevant)	S_D (Vote Decisive)
Vote	C	0
Abstain	0	$B - C$

Reading the table:

- If I vote and my vote doesn't matter, I regret wasting C
- If I abstain and my vote would have mattered, I regret losing $B - C$

If $B \geq 2C$: Maximum regret from abstaining $= B - C > C$

$\Rightarrow$ Minimax strategy: VOTE

Problems with Minimax Regret I

Leads to bizarre predictions:

Example 1: I'm indifferent between Democrats & Republicans

- $B \approx 0$, so minimax says: abstain

But a Nazi Party enters the race:

- Now B (difference between Dem/Rep and Nazi) is huge
- Minimax says: must vote to avoid tiny chance Nazi wins by one vote!
- Even though probability is infinitesimal

This is absurd: Entry of irrelevant third candidate forces me to vote

Problems with Minimax Regret II

People don't act this way elsewhere:

- Do you buy volcano insurance?
- Do you buy meteorite insurance?
- Most don't buy flood insurance even when subsidized below actuarial value
- Losing home is at least as bad as getting wrong president

Inconsistency:

- Risk-taking with home and possessions
- But minimax-conservative when voting?

Without a theory of when people use minimax regret:

- We can rationalize *ex post* but not predict *ex ante*
- Same problem as with D term

Solution 1d: Group Mobilization Models

Feddersen (2004)

- **Logic:** Voting isn't an individual act; it is a **collective action** coordinated by leaders.
- **The "Follow the Leader" Model:**
  - Leaders (parties, unions, churches) identify pivotal groups.
  - They use social pressure or mobilization to overcome the C term for the whole group.
- **The result:** Participation is rational because the group (not the individual) is pivotal.

Reference: Feddersen (2004), "Rational Choice Theory and the Paradox of Not Voting," *Journal of Economic Perspectives*

Solution 2: Expressive Voting

Fiorina (1976): Voting as expression

Voting provides utility from the act itself:

- You gain satisfaction from expressing your political identity
- Similar to cheering at a sporting event
- The value comes from participating and showing support
- Voting becomes an act of consumption - you enjoy doing it

Implication: People vote because the act itself feels rewarding, independent of whether their vote changes the outcome.

Two Interpretations of Expressive Voting

1. **Express support for preferred candidate**
   - Thank candidate for standing up for your interests
   - Makes $D = D' + B$ where:
     - D' = civic duty satisfaction
     - B = expressive benefit from supporting preferred candidate
   - Explains *why* you vote, not necessarily *how*
2. **Express views about public interest**
   - Low P frees you to vote differently than if vote mattered
   - Could be more "irresponsible" or more "noble"

The Irresponsible Voter Hypothesis

Brennan & Buchanan (1984):

If voters know their vote doesn't matter:

- They may express preferences they'd never act on if decisive
- Example: "Candidate X would ruin the country"
- "But X is the only one speaking out against immigrants"
- If you think X has no chance: vote for X to vent anxiety
- You'd *never* vote for X if your vote was decisive

The noble voter hypothesis:

- Low P could also free voters to be more ethical
- Vote for "what's good for the country" instead of self-interest
- Express moral commitments without cost

Which dominates? Evidence is mixed.

Expressive Voting: Symbolic & "Dark Urges"

Mueller (Section 14.4): Not all expression is noble.

- **Symbolic Attitudes:** Research shows that "symbolic attitudes" like racial or sexist prejudice often drive choice more than self-interest.
- **Loss of Reality:** Because the voter knows their vote won't change the outcome, they feel free to vent "dark urges" or infantile impulses.
- **The Result:** Low pivotality (P) decouples the voter from the real-world consequences of their choice, leading to potential polarization.

Schumpeter's Link: This is why the citizen "drops down to a lower level of mental performance" in politics.

Evidence Against Pure Expressive Voting (1)

Strategic voting:

- People *don't* vote for candidates running third or fourth
- Don't want to "waste" their vote
- This suggests they think votes *do* matter

Cox (1997) on tactical voting:

- **Single-member districts** = districts that elect only 1 representative (e.g., US House, UK Parliament)
- Uses First-Past-The-Post: single-winner voting rule $\rightarrow$ whoever gets most votes wins
- Voters desert hopeless candidates and vote for "lesser evil" among top two viable options

Evidence Against Pure Expressive Voting (2)

Example of tactical voting:

- You prefer Green candidate
- Polls show only Labour vs. Conservative are competitive
- You vote Labour (your 2nd choice) to block Conservative from winning
- This is *strategic voting* based on viability rather than pure expression

Why this contradicts expressive voting: If voting were purely about expressing your views, you'd vote Green regardless of whether they can win.

Experimental evidence (Carter & Guerette 1992, Fischer 1996):

- Weak evidence that people become more altruistic when P falls
- But many subjects vote selfishly regardless of P
- Suggests multiple motivations coexist

Expressive vs. Ethical: What's the Difference?

These are often confused but conceptually distinct:

Expressive Voting	**Ethical Voting**
Explains *why* you vote	Explains *how* you vote
Utility from act itself (like cheering)	Utility from outcomes for others
Can be selfish or altruistic	Always includes others' welfare
$D = D' + B$ in one interpretation	$O_i = U_i + \theta \sum U_j$ (U_i = your utility, θ = altruism weight, $\sum U_j$ = others' welfare)
Low P frees you to vote differently	High θ makes you vote for public good

Expressive vs. Ethical: What's the Difference?

Example of ethical voting:

- Wealthy voter with high θ (altruism weight) votes for higher taxes on the rich
- Personally loses money (U_i decreases), but society benefits ($\sum U_j$ increases)
- Overall satisfaction O_i can still be positive if θ is large enough

Both can coexist:

- You vote expressively (to participate) *and* ethically (for public interest)

Solution 3: The Ethical Voter

Voters have two sets of preferences:

Selfish Preferences

- Contains only your own utility
- Guides market behaviour (buying bread, choosing job)
- Standard economic rational actor

Ethical Preferences

- Contains utilities of others
- Guides political behaviour (voting, civic participation)
- Jekyll & Hyde view

Jekyll & Hyde: People genuinely switch between preference sets depending on context - selfish in markets, altruistic in politics.

The problem:

- When does each preference set activate?
- Same issue as D term - needs formalization

Formalizing Ethical Preferences

Individual i's objective function:

$$O_i = U_i + \theta \sum_{j \neq i} U_j$$

Where θ (theta) measures altruism:

- $\theta = 0$: Purely selfish voter
- $\theta = 1$: Fully altruistic voter (Harsanyi 1955)
- $0 < \theta < 1$: Partially ethical

Now the question becomes: What determines θ?

- Individual characteristics (education, income, age)?
- Context (type of election, perceived stakes)?
- Culture and institutions?

Evidence on θ

Hudson & Jones (1994): Survey in Bath, England

- Asked voters about policy preferences
- Would policy benefit you personally?
- Would policy be in public's interest?
- Estimated $\theta \approx 0.66$ (1988), $\theta \approx 0.73$ (1992)

Economic voting literature (Cross-national comparisons):

- Egotropic voting: based on personal economic situation
- Sociotropic voting: based on national economic situation
- US, UK, France, Germany: θ between 0.5 and 1.0
- Denmark: $\theta \approx 0.15$ (much more egotropic/selfish!)

The comparative puzzle:

- Why do Danish voters place less weight on others' welfare?
- Is it culture? Institutions? Welfare state design?
- This variation suggests θ isn't fixed across contexts

When Do People Vote Ethically?

Evidence that self-interest doesn't fully explain voting:

Smith (1975): Tax equalization vote in Oregon

- Simple choice: raise or lower your taxes
- 60.7% of large gainers favoured equalization
- But 32.7% of large losers *also* favoured it!
- Over 40% voted against narrow self-interest

Gramlich & Rubinfeld (1982): Michigan tax limitation

- Transfer recipients only moderately more likely to oppose
- 42% of public employees voted to restrict their own budget

Substantial minorities (and sometimes majorities) vote for "public interest"

Sociotropic vs. Egotropic Voting

Two competing models of how voters decide:

Egotropic Voting (Self-Interest)

- Vote based on personal economic situation
- "What has the government done for *me*?"
- Example: Vote against incumbent if *you* lost your job

Sociotropic Voting (Public Interest)

- Vote based on national economic situation
- "What has the government done for *the country*?"
- Example: Vote against incumbent if *national* unemployment is high

Empirical evidence: Studies estimate $\theta \approx 0.5$ to 0.7

- Voters place substantial weight on sociotropic considerations
- Consistent with ethical voter hypothesis

Lewis-Beck (1988), Kinder & Kiewiet (1979)

Solution 4: Behavioural Psychology

Mueller's key insight: Relax rationality, keep self-interest

Basic principle from behavioural psychology:

- Actions followed by rewards $\uparrow$ in frequency
- Actions followed by punishment $\downarrow$ in frequency
- This is how all animals learn

Voting as conditioned habit:

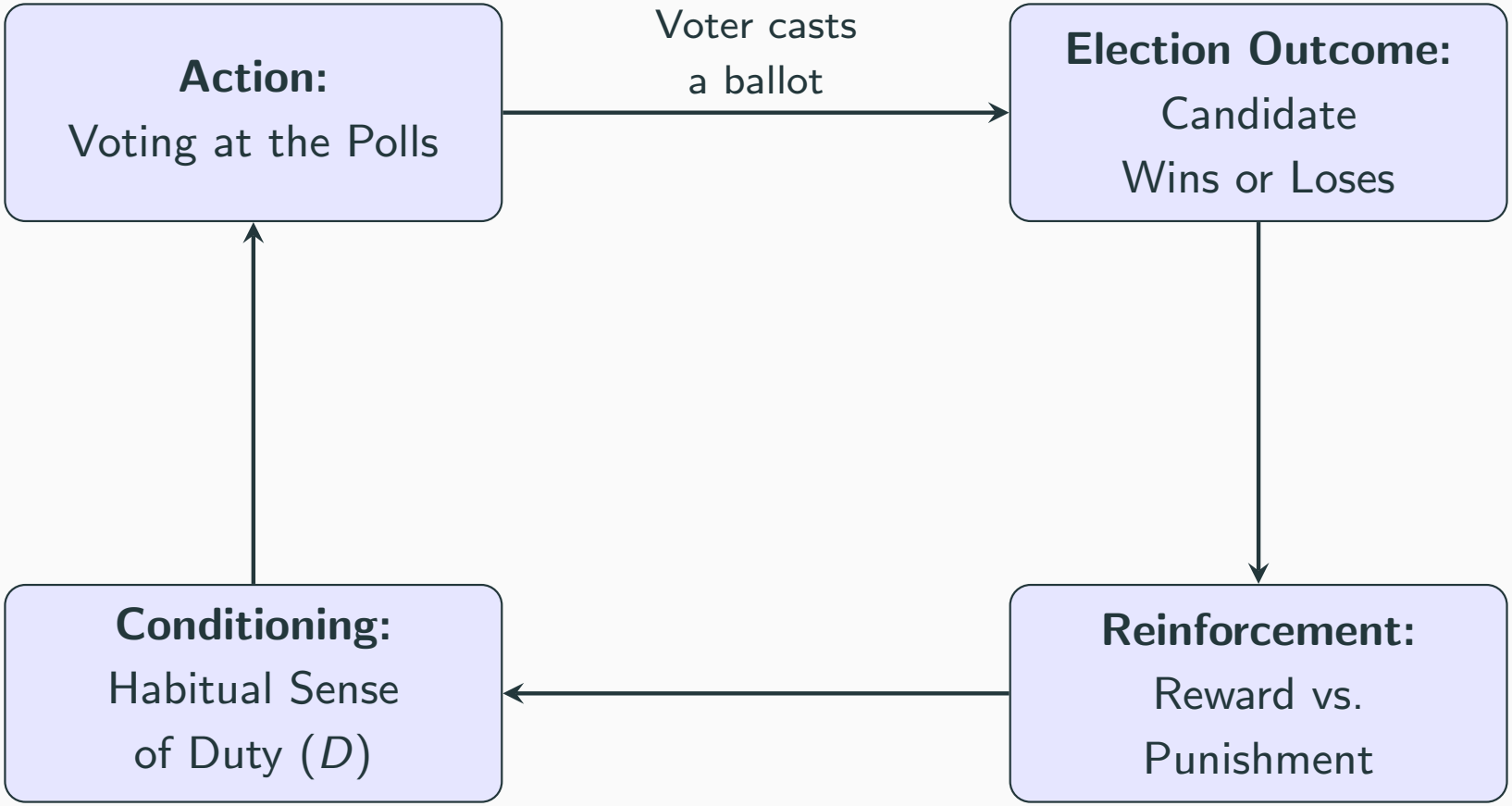
- Ethical behaviour is learned through childhood conditioning
- Parents reward cooperative behaviour, punish selfish behaviour
- Schools reward following rules, punish breaking them
- Occasional reinforcement maintains behaviour in adulthood
- Voting becomes an "unreflective and habitual act"

This is still selfish behaviour:

- It's a conditioned response, not a conscious ethical choice
- You vote because you've been trained to cooperate

Voting as a Conditioned Habit

The behavioural Reinforcement Loop (Mueller, Section 14.5)



Reward: Winning candidate reinforces act.
Punishment: Scandals/Failures extinguish act.

Why the Behavioural Approach Helps

Three advantages:

1. **Preserves self-interest assumption**
   - Ethical behaviour is conditioned selfish behaviour
   - Consistent with rational egoism foundation of economics
   - People act as if maximizing $O_i = U_i + \theta \sum U_j$
2. **Purely positive theory**
   - No normative prescripts about what people "should" do
   - Just describes how behaviour is actually learned
3. **Generates testable predictions**
   - Education, family background, religion, community stability
   - All affect conditioning $\rightarrow$ all affect voting
   - Can predict *which* individuals will have high D or θ

Relaxes rationality, keeps self-interest

Predictions from Behavioural Model

Education:

- More education = more years of reward for following rules
- Should ↑ cooperative behaviour (voting)
- Prediction: + relationship between education and turnout

Income:

- Income is society's chief token reinforcer
- High income = evidence of being rewarded for rule-following
- Prediction: + relationship between income and turnout

Age/cohort:

- Older cohorts had different civic education
- Stable communities → stronger conditioning
- Prediction: Generational differences in turnout

Empirical Evidence: US Presidential Elections

These predictions are largely confirmed by data:

Demographic Group	Turnout Rate	Data Source
Education (2020):		
Less than high school	51%	US Census
High school graduate	62%	
Bachelor's degree	77%	
Advanced degree	83%	
Income (2020):		
Under $30,000	52%	US Census
$30,000-$74,999	68%	
$75,000-$149,999	79%	
$150,000+	83%	
Age (2020):		
18-29 years	51%	US Census
30-44 years	62%	
45-64 years	69%	
65+ years	74%	

Pattern: All three predictions confirmed - strong positive relationships

Empirical Evidence: Irish General Elections

These predictions are confirmed in Irish context too:

Demographic Group	Pattern	Source
Age (2011 CSO Report):		
18-25 years	62%	CSO 2011
Over 60 years	30-40pp higher	RTÉ/ESS
Education & Social Class:		
Middle-class areas	Higher turnout	Kavanagh (Maynooth)
Working-class areas	Lower turnout	
Post-secondary education	Positive correlation	L&RS Note 2016
Geography (2011 General Election):		
Rural constituencies	60-61% (highest)	Elections Ireland
Dublin working-class	43% (lowest)	

Irish pattern: All three behavioural predictions confirmed - age, education, and socioeconomic status all correlate positively with turnout

Note: pp = percentage points. Irish data from CSO Voter Participation Module, Kavanagh electoral geography research

Empirical Evidence

Two Approaches to Testing (1)

1. **Survey Evidence (Micro-level)**
   - Ask people about their voting decisions
   - Measure perceptions of P, B, D, C
   - Relate to actual voting behaviour
   - Problem: $\sim$90% claim to vote (vs. $\sim$60% actual turnout)
   - Selection bias or misreporting?

Key advantage: Can directly measure individual motivations and perceptions

Key limitation: Over-reporting of voting behaviour undermines reliability

Two Approaches to Testing (2)

2. Aggregate Data (Macro-level)

- Use actual turnout figures by district/state/country
- Relate to election closeness, electorate size, costs
- Avoids misreporting problem
- Problem: Ecological fallacy concerns
  - Ecological fallacy = inferring individual behaviour from group data
  - E.g., "wealthy districts have high turnout" $\neq$ "wealthy individuals vote more"
  - Can't tell *which* individuals in a district are actually voting
- Can't directly measure individual P, B, D

Key advantage: Uses actual turnout data instead of self-reports

Key limitation: Can't identify individual-level motivations

Major Survey Studies: Summary

Six major studies using SRC data:

(SRC = Survey Research Center, Univ. of Michigan; conducts American National Election Studies surveys)

- Riker & Ordeshook (1968): 4,294 responses, 1952–1960
- Brody & Page (1973): 2,500 responses, 1968
- Silver (1973): 959 responses, 1960
- Ashenfelter & Kelley (1975): 1,893 responses, 1960 + 1972
- Frohlich et al. (1978): 1,067 responses, 1964
- Matsusaka & Palda (1993): 2,744 responses, Canada 1979–1980

Consensus finding:

- P has weak, inconsistent effect
- B has moderate effect
- D (civic duty) has strongest effect
- C (costs) matter significantly

The Evidence Base: Mueller's Table 14.1

Summary of Studies Testing the Downsian Model
($R = PB + D - C$)

Study	Election / Sample	P	B	D	C
Riker & Ordeshook (1968)	US Pres. 1952–60	+	+	+	–
Brody & Page (1973)	US Pres. 1968	0	+	+	–
Silver (1973)	US Pres. 1960	0	+?	+	+
Ashenfelter & Kelley (1975)	US Pres. 1960/72	0	+	+	+
Frohlich et al. (1978)	US Pres. 1964	+	+?	+?	−?
Matsusaka & Palda (1993)	Canada 1979–80	0	–	–	–
Knack (1994)	US Nat. 1984–88	–	+	+	+

Key: + = significant positive effect; − = significant negative; 0 = insignificant
? = uncertainty about whether the proxy variable measures the intended concept
Blank = variable not included in that study
Note: 91% of Canadian survey respondents claimed to vote, though actual turnout was only 76%.

What is important: P, B, D, or C?

Riker & Ordeshook (1968) findings:

Variable	Turnout Difference	Effect Size
High P vs Low P	78% vs 72%	6%
High B vs Low B	82% vs 66%	16%
High D vs Low D	87% vs 51%	36%

Interpretation:

- All three matter statistically
- But quantitatively, D dominates
- Duty effect (36%) is 6 times larger than pivotality effect (6%)
- This is the "duty" vs. "pivotality" gap

The bottom line: People vote because of civic duty, not because they think their vote is decisive

Ashenfelter & Kelley (1975) confirm: C and D dominate

Evidence on Costs (C): Policy Barriers

The Power of Costs:

Ashenfelter & Kelley (1975): The $6 Poll Tax
A mere $6 poll tax reduced the probability of voting by 42%!

- This is a massive effect for a relatively small cost
- In 1960 dollars: equivalent to about $60 today
- Gives us rough distribution of $PB + D$ for many voters

Other institutional costs:

- Literacy tests also significantly reduced turnout
- Both legal in some US states in 1960, abolished by 1972

Evidence on Costs (C): Policy Barriers

Other institutional costs:

- Knack (1993): Using voter lists for jury duty $\downarrow$ registration
- Heckelman (1995): Secret ballots $\downarrow$ voting 7%
  - Can't verify bribes $\rightarrow$ fewer bribes $\rightarrow$ less voting
- Jackman (1987): Compulsory voting $\uparrow$ turnout substantially
  - Small fines (Australia) enough to change behaviour

Cost reductions consistently increase turnout

Evidence on Costs (C): Weather

Does bad weather deter voting? Mixed evidence:

- Shachar & Nalebuff (1999): Rain $\downarrow$ turnout in US presidential elections
- Knack (1994) & Matsusaka & Palda (1999): Weather has no significant effect overall

But Knack (1994) finds important heterogeneity:

- Bad weather significantly $\downarrow$ turnout for low civic duty voters
- Bad weather has no effect on high civic duty voters

Interpretation:

- Underscores joint importance of D and C in Downsian model
- High D voters overcome higher C from bad weather
- Low D voters deterred by even small cost increases

Evidence on Probability (P): Aggregate Studies

Test using actual turnout data:

- Regress turnout on $(p - 0.5)$ and N
- $(p - 0.5)$ = deviation from 50-50 split
- N = size of electorate
- Both should $\downarrow$ turnout if P is important

Table 14.2 in Mueller: 26 studies reviewed

Mixed results:

- Closeness: Negative and significant in $\sim$60% of studies
- Electorate size: Negative and significant in $\sim$50% of studies
- When significant, always correct sign
- But many studies find no effect

Foster (1984): Most comprehensive reanalysis

- Tested 4 previous models on 1968, 1972, 1976, 1980 data
- Unstable coefficients, mostly insignificant

The Ecological Fallacy Problem

Why might aggregate data mislead?

Matsusaka & Palda (1993):

- Survey: Perceived closeness has no effect on individual voting
- Aggregate data (same election): Closeness does affect turnout
- Interpret as confirmation of ecological fallacy

Alternative explanation (Cox & Munger 1989):

- Candidates mobilize supporters more in close elections
- Higher turnout not because voters think P is higher
- But because more pressure/mobilization efforts
- Spurious correlation between turnout and closeness

Bottom line:

- Even aggregate studies don't give strong support for P
- Effect is inconsistent across elections and specifications

Sociological Variables: Education & Income

Education:

- Consistently positive and significant predictor
- Found in virtually every study
- Higher education $\rightarrow$ higher turnout

But why?

1. Reduces information costs $\rightarrow$ lowers C
2. More accurate understanding of P $\rightarrow$ should *lower* turnout!
3. Stronger conditioning in cooperative behaviour $\rightarrow$ higher D

Income:

- Also consistently positive (with some exceptions)
- Higher opportunity cost $\rightarrow$ should *lower* turnout
- But income = marker of success at rule-following
- Suggests D / behavioural explanation

Electoral Systems: A Quick Primer

Two main types of electoral systems:

Proportional Representation (PR)

- Seats allocated in proportion to vote share
- Multi-member districts (elect multiple representatives)
- Examples: Ireland (PR-STV), Netherlands, Sweden, Denmark
- Key feature: Multiple parties typically win seats

Majoritarian/Winner-Take-All

- Candidate with most votes wins the seat
- Single-member districts (one winner per district)
- Examples: US, UK (First-Past-The-Post)
- Key feature: Second-place gets nothing

Why this is important: Mueller argues the electoral system affects whether voting is "rewarded" or "punished"

Multiparty vs. Two-Party Systems: Reinforcement Logic

Mueller's behavioural explanation for turnout differences:

Multiparty/PR Systems: Winning as Reward

- Almost everyone's party wins *some* seats
- Voting is followed by positive reinforcement
- Maintains habit of voting
- Example: Netherlands, Ireland, Sweden (higher turnout)

Two-Party Systems: Losing as Punishment

- Winner-take-all: roughly half the voters lose entirely
- Losing is aversive - punishes the act of voting
- Gradually extinguishes voting behaviour
- Example: US, UK (lower turnout)

Prediction: Turnout should be higher in PR systems, all else equal

Turnout Decline in the US, Part 1: Party ID

Puzzle:

- Education levels have risen steadily since 1960s
- If education $\uparrow$ turnout, turnout should have risen
- But turnout has fallen dramatically since 1960

Abramson & Aldrich (1982): Two factors explain 2/3 of decline

1. Weakening party identification
2. Declining belief in government responsiveness

Turnout Decline in the US, Part 2: Reinforcement

Mueller's behavioural reinforcement interpretation:

- Voting for winner usually reinforces behaviour (your side won!)
- 1960s–1970s: "Punishment" era
  - Johnson: Vietnam War disaster
  - Nixon: Watergate scandal
  - Carter: Economic malaise, Iran hostage crisis
- Winners *disappointed* their supporters
- Voting was punished, not rewarded
- Even winners felt they "lost" - candidate didn't deliver
- Frequency of voting declined as habit was extinguished

This explains why rising education didn't translate to rising turnout

Recent Experimental Evidence

DellaVigna, List, Malmendier, & Rao (2017):

- Social image concerns: People vote to tell others
- Door-to-door survey with experimental variation
- Estimated value of "voting to tell others" $\approx$ \$15
- Contributes $\sim$2 percentage points to turnout
- 25–50% of non-voters lie about having voted!

Gerber, Green, & Larimer (2008):

- Field experiment with different get-out-the-vote mailings
- "Neighbors" treatment: Your voting record will be made public
- This treatment increased turnout by 8.1 percentage points
- Social pressure far more effective than civic duty appeals

Social pressure is important - consistent with behavioural/conditioning explanation

When Theory Meets Data: Blais & Young

Blais & Young (1999): Fascinating experiment

Setup:

- Canadian university students
- Control group: Asked about voting intentions
- Treatment group: Heard 10-minute lecture on Downsian model
- Then asked about voting intentions

Results:

- Treatment group: Abstention rate $\uparrow$ 7%
- Students "generally do not think in terms of benefits and costs"
- Voting is "unreflective and habitual act, based primarily on sense of duty"
- When framed as rational choice, some decide not to vote

Implication: Don't teach this lecture too well, or your students will stop voting!

The Empirical Reality: Mueller's Bottom Line

After reviewing dozens of studies, Mueller's clear conclusion:

Probability (P) is weak

- Closeness of election has very inconsistent relationship with turnout
- When significant, effect is small
- Aggregate studies plagued by ecological fallacy

Duty (D) and Cost (C) are dominant

- Poll taxes, registration barriers have huge effects
- Civic duty measures 3–6x stronger than probability measures
- These are much more powerful predictors than chance of being "tie-breaker"

The "So What?": People vote for reasons other than instrumental rationality

Conclusions

What We Learned

1. P has weak effect on turnout
   - Voters don't respond strongly to pivotality
   - Effect inconsistent across studies and elections
2. D and C dominate the decision
   - Civic duty is important most (effect size 3–6x larger than P)
   - Costs clearly matter (poll taxes, weather, etc.)
3. Multiple explanations coexist
   - Taste for voting, expressive, ethical, behavioural all play roles
   - Different voters may have different motivations
   - Same voter may have different motivations in different contexts
4. Rational egoism is challenged but not abandoned
   - Depends on how we model D and θ
   - behavioural approach preserves self-interest

Implications for Democracy

If voters are ethical/expressive rather than purely selfish:

Potential benefits:

- Voters place weight on public interest ($\theta > 0$)
- May lead to better social outcomes
- Reduces dimensionality of issue space (ideology filters)

Potential costs:

- Expressive voting can be irresponsible or extreme
- Ethical/ideological framing makes compromise harder
- Examples: abortion, language policy, religion
- Can lead to polarization and instability

Policy implications:

- Should we artificially increase turnout? (compulsory voting)
- High turnout $\neq$ better democracy if marginal voters are uncertain
- Quality vs. quantity of participation

Open Questions for Future Research

1. **What determines D?**
   - Can we predict when civic duty will be high or low?
   - What role do education, socialization, media play?
2. **What determines θ?**
   - Why are Danish voters more selfish than German voters?
   - Why do some people vote ethically and others selfishly?
3. **When do people switch between preference sets?**
   - What triggers ethical vs. selfish behaviour?
   - Market behaviour vs. political behaviour: why the difference?
4. **How do institutions affect motivations?**
   - Do different electoral systems (proportional vs. winner-take-all) change why people vote?
   - Do referendums elicit different motivations than elections?

A fully predictive theory of voting still eludes us

The Paradox Persists

We can explain *that* people vote,

but not fully explain *why*

The fundamental tension:

- Public Choice assumes rational, self-interested actors
- Voting seems inconsistent with this assumption
- Solutions either:
  - Add auxiliary assumptions (D, minimax, expressive)
  - Relax rationality (behavioural, habit)
  - Relax self-interest (ethical, altruistic)
- Each approach has strengths and weaknesses

This is what makes it a *paradox* - not a puzzle with a clear answer, but a fundamental challenge to our understanding of political behaviour

Summary: The Journey

The Problem

$P \approx 0.00006$

Why vote?

↓

Proposed Solutions

Civic duty (D) • Expressive voting • Ethical voting

Minimax regret • Behavioural models • Habit

↓

The Reality

All explanations have merit

None fully resolves the paradox

Different voters, different motivations

Three Things to Remember

1. **The Math Says Don't Vote**
   - $R = PB - C$ predicts zero turnout
   - Your vote has $\sim$6 in 100,000 chance of mattering

2. **People Vote Anyway**
   - 50–70% turnout in democracies worldwide
   - Not explained by pivotality (P)
   - Better explained by duty (D), expression, ethics

3. **This Matters for Democracy**
   - Reveals limits of pure rational choice theory
   - Humans are more than selfish calculators
   - Quality of democracy depends on *why* people vote

Questions?

Irish Context & Applications

Ireland's High Turnout: The Puzzle

Comparative perspective:

- Irish general election turnout: typically 60–65%
- Relatively high compared to US ($\sim$55–60%), UK ($\sim$60–70%)
- But lower than some European countries (Belgium 90%+, Sweden 80%+)

Questions to consider:

1. Does rational choice (Downsian model) explain Irish turnout?
2. Or do we need expressive/ethical voting models?
3. What Irish-specific factors might matter?
    - PR-STV electoral system
    - Small constituencies (perception of P?)
    - Strong party identification
    - Political culture and civic duty

PR-STV and Voter Information Costs

Is PR-STV "too expensive" for the Rational Voter?

- **High Information Costs (C):** Voters must rank multiple candidates, often from the same party.
- **Intra-party Competition:** Differentiating between two candidates from the same party requires high "disciplined effort".
- **Rational Ignorance:** To minimize C, voters may use "donkey voting" (ranking 1, 2, 3 in ballot order).

Question: Does the complexity of PR-STV discourage marginal voters, or does it increase B by giving them more choice?

The "Brokerage" Effect

Mueller's Behavioural Model in Ireland:

- **Personalized B:** TDs focus on local favours to provide a direct, unmistakable link to the voter's private concerns.
- **Reinforcement:** Securing a medical card or a local road repair acts as a "token reinforcer".
- **Result:** High turnout in rural areas may be driven by these direct "rewards" for the act of voting.

Connection to theory: This increases the perceived B (benefit) and provides behavioural reinforcement, both of which increase turnout.

Irish Referendums vs. General Elections

Typical pattern:

- Referendum turnout often lower than general elections
- Examples: Marriage equality (60.5%), Lisbon Treaty (53%, then 59%)
- But some referendums had high turnout (Abortion 2018: 64.1%)

What does Public Choice predict?

Argument 1: Referendums should have higher turnout

- Direct policy choice $\rightarrow$ higher B
- Your vote directly determines outcome, not just who decides

Argument 2: Referendums should have lower turnout

- No party labels to guide $\rightarrow$ higher information costs
- Rational ignorance kicks in
- Lower D if civic duty tied to electoral cycle

Which argument is stronger? What does Irish data show?

Information & The Swing Voter's Curse

Feddersen & Pesendorfer (1996): Why uncertainty leads to abstention.

- **Rational Abstention:** If you don't know which candidate is better, the rational choice is to stay home to let the *informed* decide.
- **The Curse:** If an uninformed person votes, they risk "canceling out" the vote of someone who actually knows the policy details.
- **Mueller's View:** If the reason for abstention is uncertainty, forcing people to vote (compulsory voting) is likely to worsen democratic outcomes.

Feddersen & Pesendorfer (1996), "The Swing Voter's Curse," *American Economic Review*.

Compulsory Voting for Ireland?

The proposal:

- Small fine (€50–€100) for not voting → works in Australia, Belgium → could increase turnout to 90%+

Arguments in favour:

- Higher participation = more legitimate outcomes
- Forces citizens to engage with politics
- Reduces class bias in turnout

Public Choice counterarguments:

- Brings low-D, uncertain voters to polls
- These are exactly the voters who would have abstained
- High civic duty voters already voting
- May *reduce* quality of electoral outcomes
- Matsusaka (1995): Uncertainty makes voting worse, not better

Key insight: High turnout $\neq$ better democracy if marginal voters are uninformed

Your Irish Context Presentations

Week 3 Presentation Topics:

Example prompts you might receive:

- Why is voter turnout in Irish general elections relatively high compared to many OECD countries? Does rational choice explain this, or do we need expressive/ethical voting models?
- Compare turnout in Irish referendums vs. general elections. What does Public Choice predict, and does the data fit?
- Does compulsory voting (hypothetical) make sense for Ireland given the paradox of voting?

What you're being tested on:

- Understanding of rational ignorance
- Expressive voting vs. instrumental voting
- Role of civic duty (D)
- How institutional context affects P, B, C, D

Preparing Your Irish Context Presentation

Steps to prepare:

1. **Get the data**
   - Irish election turnout over time
   - Comparative OECD data
   - Referendum vs. election turnout
2. **Apply the theory**
   - Does Downsian model ($R = PB - C$) explain patterns?
   - What about $R = PB + D - C$?
   - Do you need expressive/ethical models?
3. **Consider Irish-specific factors**
   - PR-STV vs. FPTP (affects perception of P?)
   - Constituency size (small $\rightarrow$ higher P?)
   - Political culture (strong civic duty tradition?)
4. **Synthesize**
   - Which theory best explains Irish patterns?
   - Where do the data not fit?

Hints for Irish Context Analysis

Useful comparisons:

- Ireland vs. UK (similar culture, different electoral systems)
- Ireland vs. Northern Ireland (same island, different contexts)
- Ireland vs. Belgium/Australia (compulsory voting counterfactual)
- Over-time trends in Ireland (declining or stable?)

Key variables to consider:

- Electoral system (PR-STV)
- Constituency size (3–5 seats typical)
- Party system (multi-party, coalition governments)
- Referendum frequency (constitutional amendments)
- Registration system (automatic or not?)

Resources:

- CSO (Central Statistics Office) election data
- OECD turnout statistics
- Academic papers on Irish voting behaviour

Sources / Suggestions

Data Sources: US Voter Turnout Statistics

US Census Bureau Data (2020 Presidential Election):

- **Main Report:** Voting and Registration in the Election of November 2020 (P20-585)
  - `https://www.census.gov/content/dam/Census/library/publications/2022/demo/p20-585.pdf`
- **Press Release:** 2020 Presidential Election Voting and Registration Tables
  - `https://www.census.gov/newsroom/press-releases/2021/2020-presidential-election-voting-and-registration-tables-now-availab html`
- **Historical Data:** Voting and Registration time series (1964-present)
  - `https://www.census.gov/topics/public-sector/voting.html`

Data Sources: Irish Voter Turnout Statistics

Central Statistics Office & Academic Research:

- **CSO (2011):** Voter Participation Module, QNHS
  - https://www.cso.ie/en/qnhs/qnhsmethodology/voterregistrationandparticipationmodule/
- **Kavanagh, A. (Maynooth):** Electoral geography and turnout patterns
  - https://www.maynoothuniversity.ie/research/spotlight-research/getting-out-vote-what-influences-voter-turnout
- **Oireachtas Library (2016):** Election turnout in Ireland - measurement, trends and policy
  - https://data.oireachtas.ie/ie/oireachtas/libraryResearch/2016/2016-01-28_l-rs-note-election-turnout-in-ireland-measurement-trends-and-policy-implicatio
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Cultural Resources: Films & TV Series

Strategic Political Behaviour & Cynicism:

- **House of Cards** (USA, Season 1) - Strategic manipulation and rational self-interest
- **Veep** - Satirical take on political motivations
- **The Thick of It** (UK) - Cynical comedy about political spin

Civic Duty & Idealism (the counterpoint):

- **The West Wing** - Public service as noble calling
- **Parks and Recreation** - Local government and civic engagement
- **Mr. Smith Goes to Washington** (1939) - Classic civic duty ideal

Social Media & Political Performance:

- **The Social Dilemma** (Netflix) - Connects to our social media discussion

Cultural Resources: Books & Essays

Directly relevant to this lecture:

- Bryan Caplan - *The Myth of the Rational Voter* (2007)
- Nassim Taleb - "The Most Intolerant Wins: The Dictatorship of the Small Minority"
- Mancur Olson - *The Logic of Collective Action* (already in your reading list!)

For Irish Context:

- **Reeling in the Years** (RTÉ) - Irish political/cultural history
- Episodes covering referendum campaigns (divorce, abortion, marriage equality)

Podcasts:

- **EconTalk** - Episodes with Michael Munger, Bryan Caplan on voting
- **More or Less** (BBC) - Statistical literacy in politics
- **Good on Paper** - "Did Busing Turn Kids Into Democrats?" (Episode on how school integration shaped political identities)

How to Engage with These Resources

Suggested approach:

1. Pick one that interests you
2. Watch/read with the lecture models in mind
3. Ask yourself:
    - Are characters motivated by PB, D, expressive benefits, or ethical concerns?
    - Do they behave as rational actors?
    - Where does the model break down?
4. Consider discussing in your Irish Context presentations

Remember: These are cultural representations and not rigorous analysis - but they can help you think critically about political behaviour models!