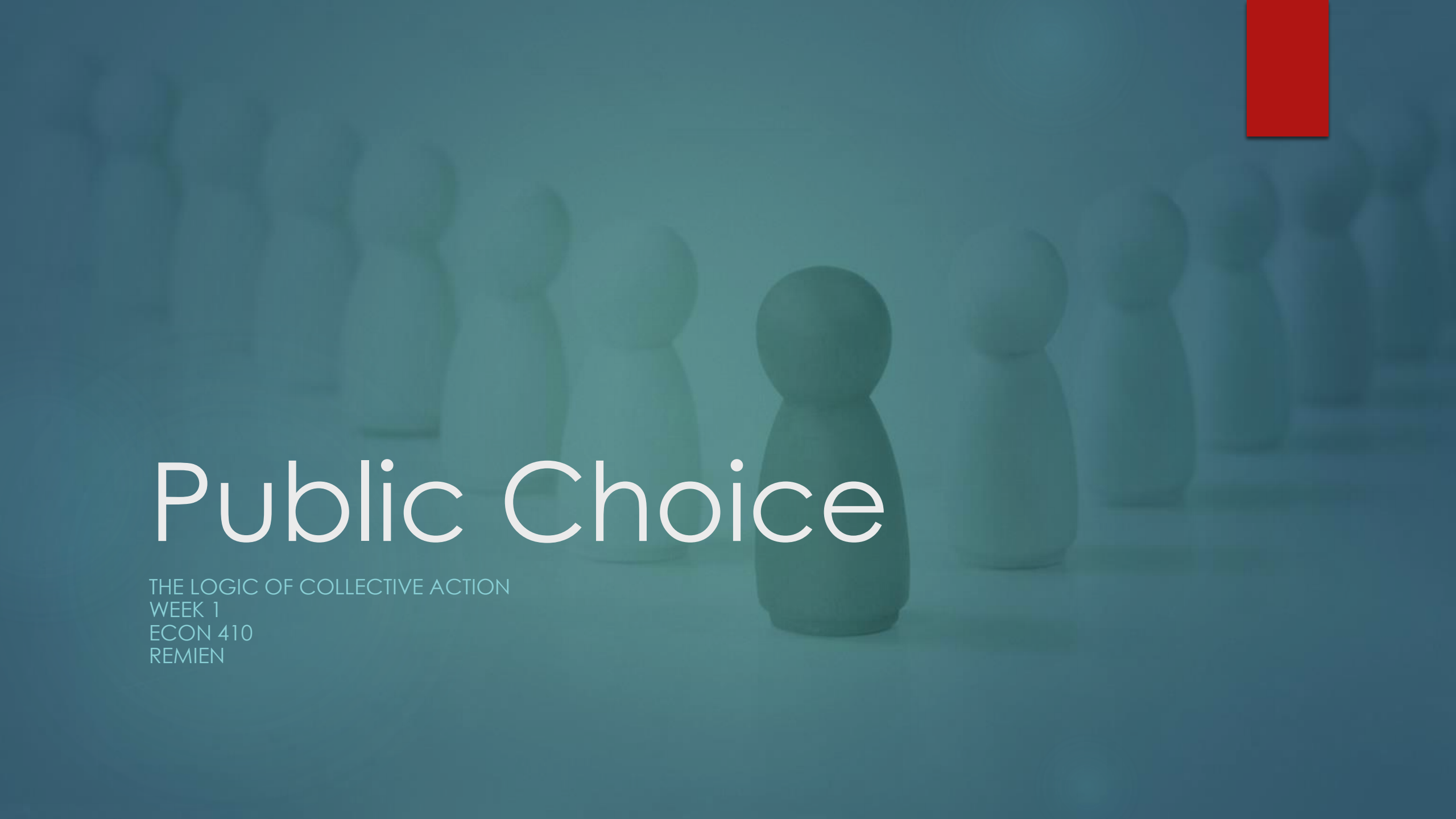




# Public Choice

THE LOGIC OF COLLECTIVE ACTION  
WEEK 1  
ECON 410  
REMIEN



# THIS WEEK'S ROADMAP

# What is Public Choice

- ▶ **Economists** historically studied **Market Behavior**
- ▶ However, even in the early days, Economists like Thomas Malthus applied the Economic Way of Thinking to other things
- ▶ **Public choice** is the analysis of government and politics according to the Economic Way of Thinking
  - ▶ “Endogenizing Government Behavior”





# Public Choice has Many Names

- ▶ The following list contains several other terms that have been used to describe practically the same thing
  - ▶ Political Economy
  - ▶ Rational Choice Theory
  - ▶ Social Choice Theory
  - ▶ Formal Political Modeling
  - ▶ Economics of Governance
  - ▶ Endogenous Policy Theory
- ▶ Public Choice mainly argues the Civics Textbook understanding of politics

# Evolution of Public Choice

① Knut Wicksell 1896

② A. Downs 1957

An Economic Theory of Democracy

③ J. Buchanan + G. Tullock

1962

The Calculus of Consent



# Economics as a Way of Thinking

- ▶ Economics is not just finance and business.
- ▶ “I believe that what most distinguishes economics as a discipline from other disciplines in the social sciences is not its subject matter but it's approach” – Gary Becker
- ▶ Dr. Gary Becker won his Nobel Prize in Economics in 1992
- ▶ I am a Beckerian Economist, and believe that the economic way of thinking can be applied to all human interactions!~

# Preferences Distinction

## **Beckerian Preferences-**

Describes the basic needs that are assumed to be stable. These are things like the need for food, the desire for entertainment, and so on.

**General Preferences-** These are used in the discussion of consumer choice, and are a general term used to describe the extremely complex subjective calculations you make every day.



# The Straitjacket and Why It's a Good Thing!

- ▶ **Economics is bound to a theoretical straight jacket** of assumptions that prevent economists from just making things up
- ▶ **Market Equilibrium**
- ▶ **Maximalization**
- ▶ **Stable “Beckerian” Preferences**



Becker is sometimes jokingly called an “Economic Imperialist”



Public Choice, applying the economic way of thinking to politics and government, is a form of intellectual “Economic Imperialism”



Many Public Choice Economists are themselves Beckerians, or at the very least hold Becker in high regard

What does  
Becker have  
to do with  
Public  
Choice?

# Efficiency Definition Part One



Merriam-Webster College Dictionary defines “efficiency” as “effective operation as measured by comparisons of production with cost (as in energy, time, and money)”



Like with many terms, Economists rarely use the word “efficiency” in the dictionary sense

# Efficiency Definition Part 2

## Pareto Efficiency

- ▶ A situation is Pareto efficient iff the only way to make one person better off is to make another worse off.
- ▶ Most famous welfare-economics theorems are about this
- ▶ **Iff**-if any only iff

## Kaldor-Hicks Efficiency

- ▶ A situation is K-H ("cost-benefit") efficient iff the dollar value of social resources is maximized.
- ▶ More likely to be achieved in the real world, since as long as the monetary value of social resources is maximized, it is K-H Efficient

# Pareto Efficiency

- ▶ **A Pareto improvement:** a change that makes **someone** better off without making **anyone** worse off
- ▶ **In theory**, possible at a larger scale in highly stylized settings → identical general preferences and endowments
- ▶ **Outside of theory**, is extremely rare to see **Pareto improvements** as it can be argued that:
  - ▶ Everything is Pareto efficient
  - ▶ Pareto improvements are impossible

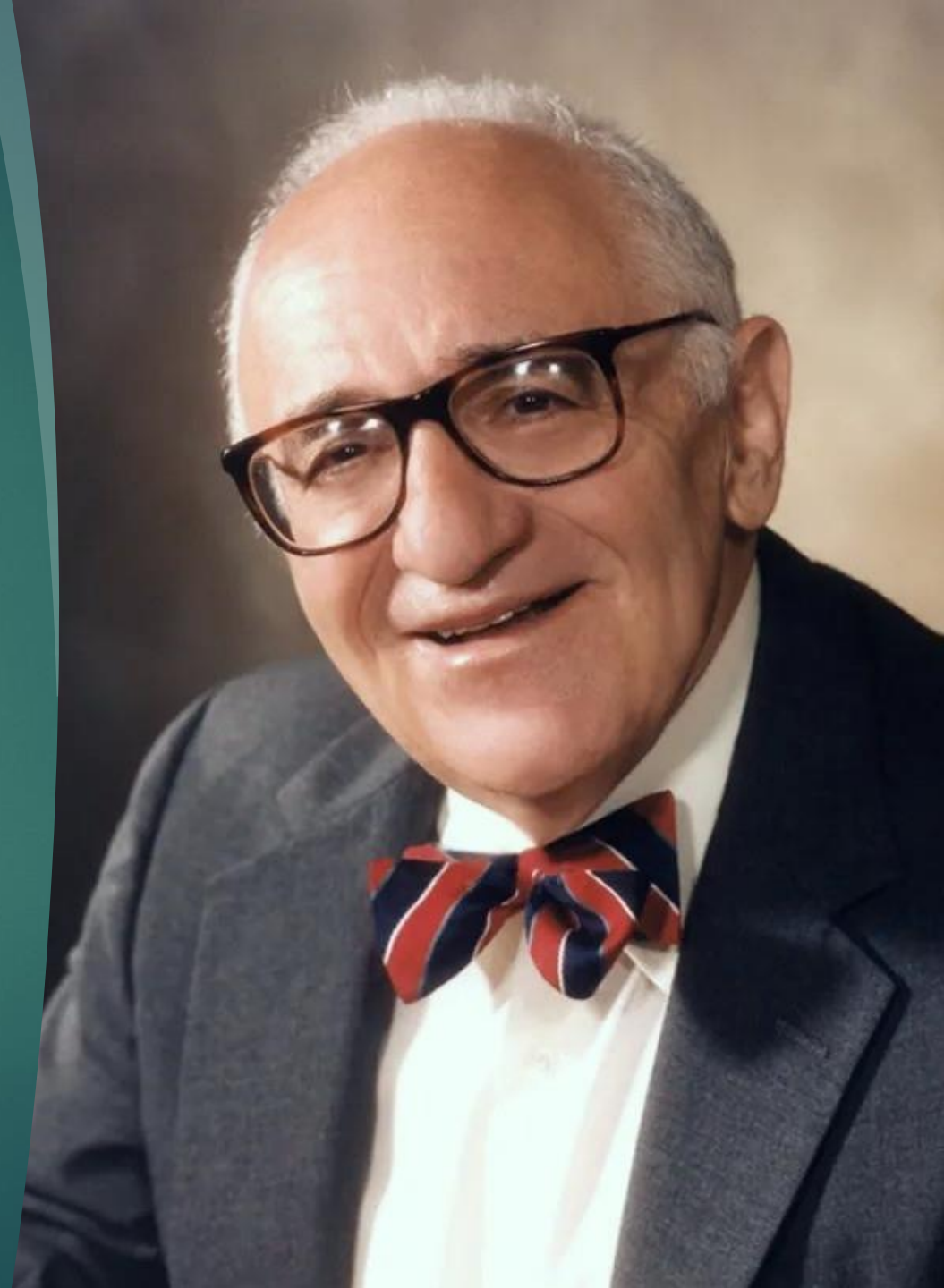
# Why do some argue that Pareto Improvements are Impossible?

- ▶ It is extremely hard to change anything and not hurt someone in **some** way
- ▶ In practice, it is highly unlikely that **everyone** negatively affected can be compensated in a way that literally **no one** is missed
- ▶ **Watch Story Part 1**



# Small Caveats in Defense of Pareto Improvements being possible

- ▶ **Rothbard Variant:** Only count “demonstrated preferences”. Then Pareto improvements happen all the time in his view. (For an Austrian Economist, this is bizarrely Behavioristic and slightly clashes with the idea of maximization)
- ▶ **Ex ante Variant:** Analyze the Pareto efficiency of ex ante **rules** instead of ex post **results**.
  - ▶ Used in constitutional economics
  - ▶ Still strange to consider, as it's **very** likely someone falls through the cracks





# Kaldor-Hicks Efficiency

- ▶ Most common use of the word “efficiency” in economics
- ▶ “Cost-benefit efficiency”
- ▶ A **Kaldor-Hicks improvement** is any change that **raises** the dollar value of social resources



# Example of Kaldor-Hicks Efficiency

- ▶ NYC congestion pricing charges an E-ZPass toll of \$9 a day to enter this zone
- ▶ Rates vary by vehicle type and time of day
- ▶ While unpopular, this policy is K-H efficient because the social value of the reduced congestion and pollution outweighs the social cost

# Interesting Point



- ▶ Every Pareto improvement is a **K-H improvement**
- ▶ But most K-H improvements **are not** Pareto improvements
- ▶ By definition, if something is K-H efficient, it is potentially Pareto efficient via redistribution
- ▶ Keep in mind, **most** Pareto efficient outcomes are **not** K-H efficient

# Potentially Pareto Efficient

- ▶ K-H Efficiency is often described as “**potentially Pareto efficient**” because if the value of social resources rises, then (assuming perfect continuity), you **could** compensate all the losers by sharing the gains
- ▶ **Could**, is stressing a world where transaction costs are **ZERO**
- ▶ When you judge whether something is a K-H improvement, you should consider the cost of the move itself

# Definitions



**Transaction Costs-** the time, effort, and other resources needed to search out, negotiate and complete an exchange



## **Private Property Rights**

1. The right to exclusive use of the property
2. Legal protection against invasion from other individuals who seek to use or abuse the property without the owners permission
3. the right to transfer, sell, exchange or manage the property



# Piracy Example of Deadweight Loss

# Comparative Instructions Approach

- ▶ Demsetz famously complained about the “**Nirvana fallacy**” – doing (K-H) efficiency comparisons while selectively relaxing important constraints
- ▶ His target was old-style welfare economics, where the government is the simplest solution to all problems
- ▶ Demsetz’s lesson is that economists should use a comparative institutions approach and focus on “second best,” as the “best” is often unrealistic expectations inside your own head
- ▶ **Tale of the Emperor story**



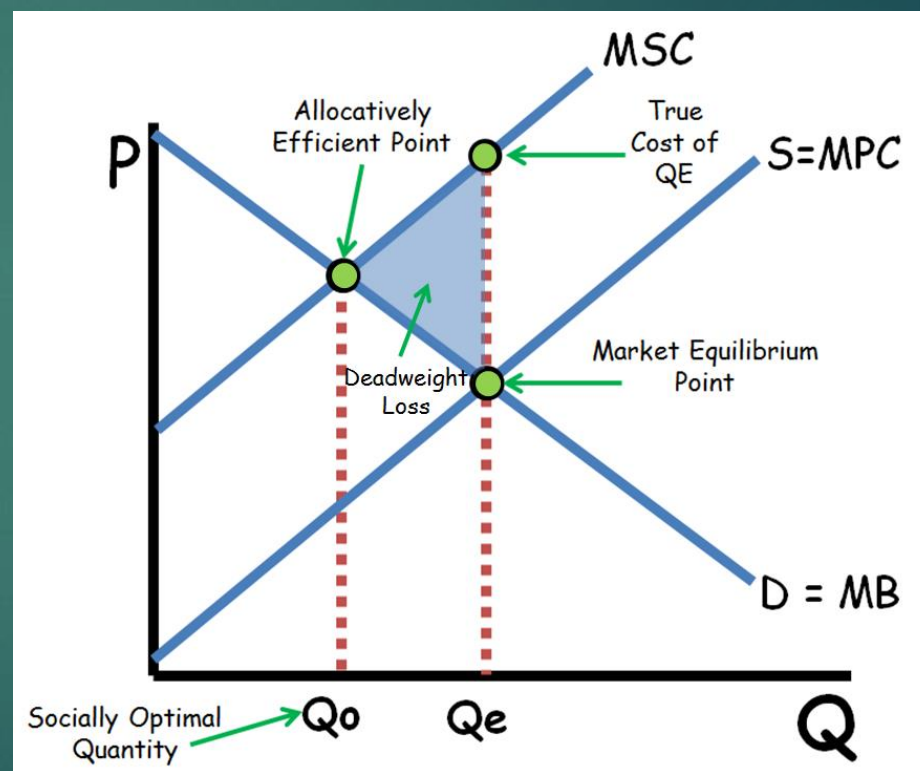
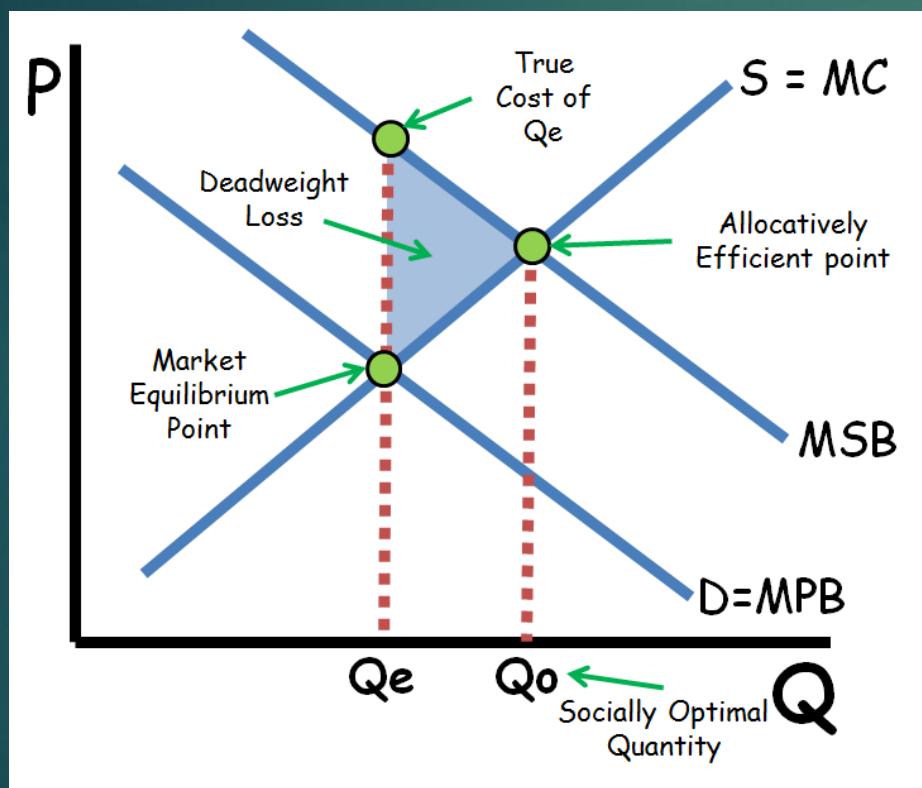
# Externalities

**An Externality** is the spillover effects of an activity that influences the well-being of nonconsenting parties

**Negative Externality**- A cost that is imposed on an uninvolved third party as a result of an economic activity that is not reflected in the price of the good or service. (A polluting factory)

**Positive Externality**- a benefit that accrues to a third party that is not directly involved in the transaction. Sometimes referred to as a "Public good"

# Positive Vs Negative Externality Explained



# Externality Abbreviations

MSB = Marginal Social Benefit

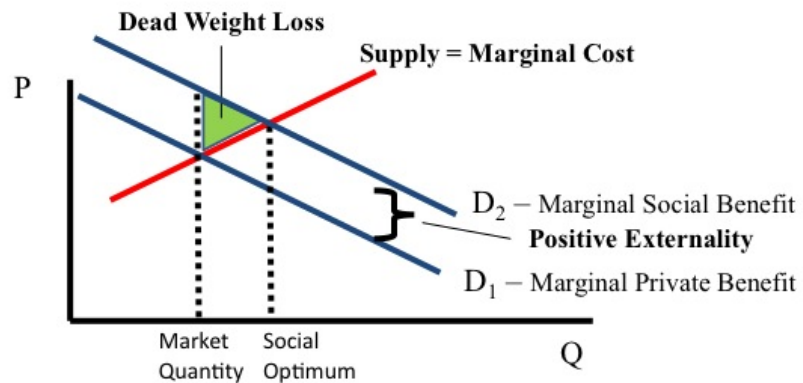
MPB = Marginal Private Benefit

MSC = Marginal Social Cost

MPC = Marginal Private Cost

# DWL caused by an externality

## Positive Externalities



- ▶ If something has a **negative externality**, then at market prices it will be **overproduced** when compared to what is **socially** optimal
- ▶ If something has a **positive externality**, then at market prices it will be **underproduced** when compared to what is **socially** optimal



# What Are Public Goods?

- ▶ In Economics, **public goods** are services or commodities that are both **non-rivalrous** and **non-excludable**
- ▶ **Non-Rivalrous**- a good or service can be consumed by one person without reducing its availability for others
- ▶ **Non-excludable**- a good or service for which it is impossible or impractical to prevent people from using the good or service regardless of payment



# Why are Public Goods Important

- **Free-rider problem:** people can benefit without paying → private markets tend to **underprovide** public goods
- **Government's classic role:** finance/provide public goods and **enforce property rights & contracts**
- **Why we care:** public goods affect **security, trade, and growth**



# Definitions

- ▶ **Private Goods-** **Both** rival and excludable
- ▶ **Public Goods-** **Neither** rival nor excludable
- ▶ **Club Goods-** Goods that **are** excludable but **largely** non-rival
  - ▶ Popularized by Economist James Buchanan of GMU Fame
- ▶ **Common Resources-** Goods that **are** rival but not **largely** excludable
- ▶

# MICRO



|          | EXCLUDABLE                                                    | NONEXCLUDABLE                                                                      |
|----------|---------------------------------------------------------------|------------------------------------------------------------------------------------|
| RIVAL    | <b>Private Goods</b><br>Jeans<br>Hamburgers<br>Contact lenses | <b>Common Resources</b><br>Tuna in the ocean<br>The environment<br>Public roads    |
| NONRIVAL | <b>Club Goods</b><br>Cable TV<br>Wi-Fi<br>Digital music       | <b>Public Goods</b><br>Asteroid deflection<br>National defense<br>Mosquito control |



# What is Market Failure?



Market Failure- is defined commonly as an economic situation where the free market is unable to allocate resources efficiently



Examples include monopoly, externalities, imperfect or asymmetric information



Many **Austrian or Austrian-influenced** economists warn against labeling things as market failure too broadly



# Why does this matter?

- ▶ The provision of public goods has long been the primary justification for government
- ▶ Correcting market failure is a primary argument for the expansion of government and government regulation of the economy
- ▶ Yet the exact definitions of public goods, and the application of market failure started to be questioned about 70 years ago

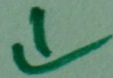
# Public Goods

P. Samuelson 1954

Prisoner's Dilemma



Underproduction



Market Failure



# Public Choice Week 1 Part 2



# Last Lecture Recap

# Some Popular and Plausible Examples of Externalities

- ▶ Air pollution-Negative
- ▶ National defense-Positive
- ▶ Highways-Positive
- ▶ Children-Positive



# The Case Against Education

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Why the  
Education System  
Is a Waste of  
Time and Money

---

Bryan Caplan

Education isn't  
exactly the  
best example

# Unpopular but Plausible Examples



## Political censorship

If many citizens dislike a dissenter's speech, they may all benefit when someone else bears the cost of silencing it.



## Religious persecution

If a majority dislikes a religious minority, suppression can create benefits for many non-payers.



## Example intuition

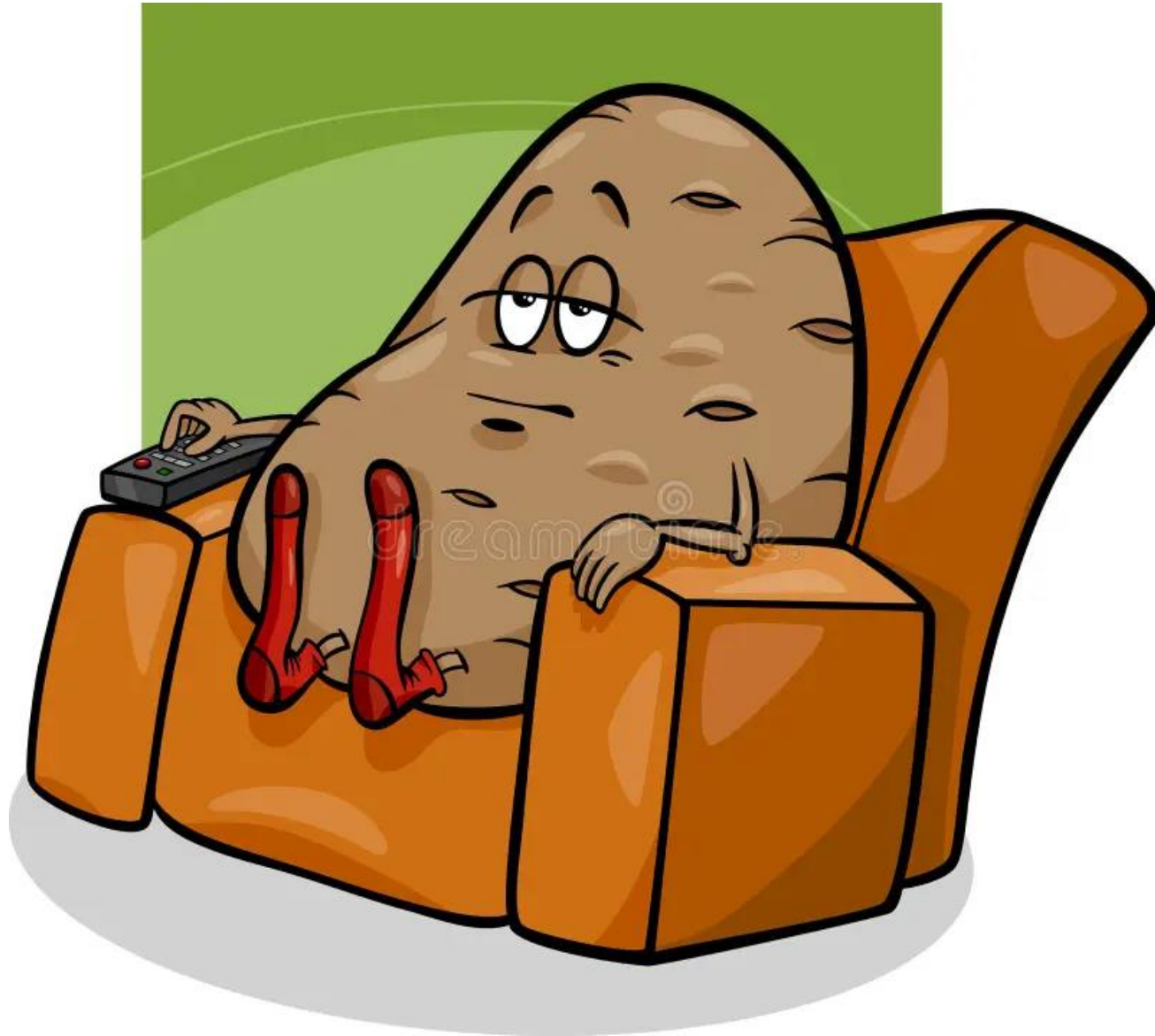
Imagine a town where nearly everyone dislikes one dissenter's message. If one person pays to silence the dissenter, many others benefit without paying. That is a plausible public-good / externality structure.



**Key point:** Economically plausible does not mean morally good.

# The Fallacy of Group Action

- ▶ People often think in terms of groups acting to promote group interests
  - ▶ Workers/Capitalists
  - ▶ Women/Men
  - ▶ Black/White
- ▶ This is a Fallacy of composition: just because all members of group X would benefit if all members did something, it does not follow that it benefits any individual member to do so



Should You  
Join the  
Communist  
Revolution?

# Scenario: Workers believe a successful revolution will make **all workers better off**

## If the revolution succeeds

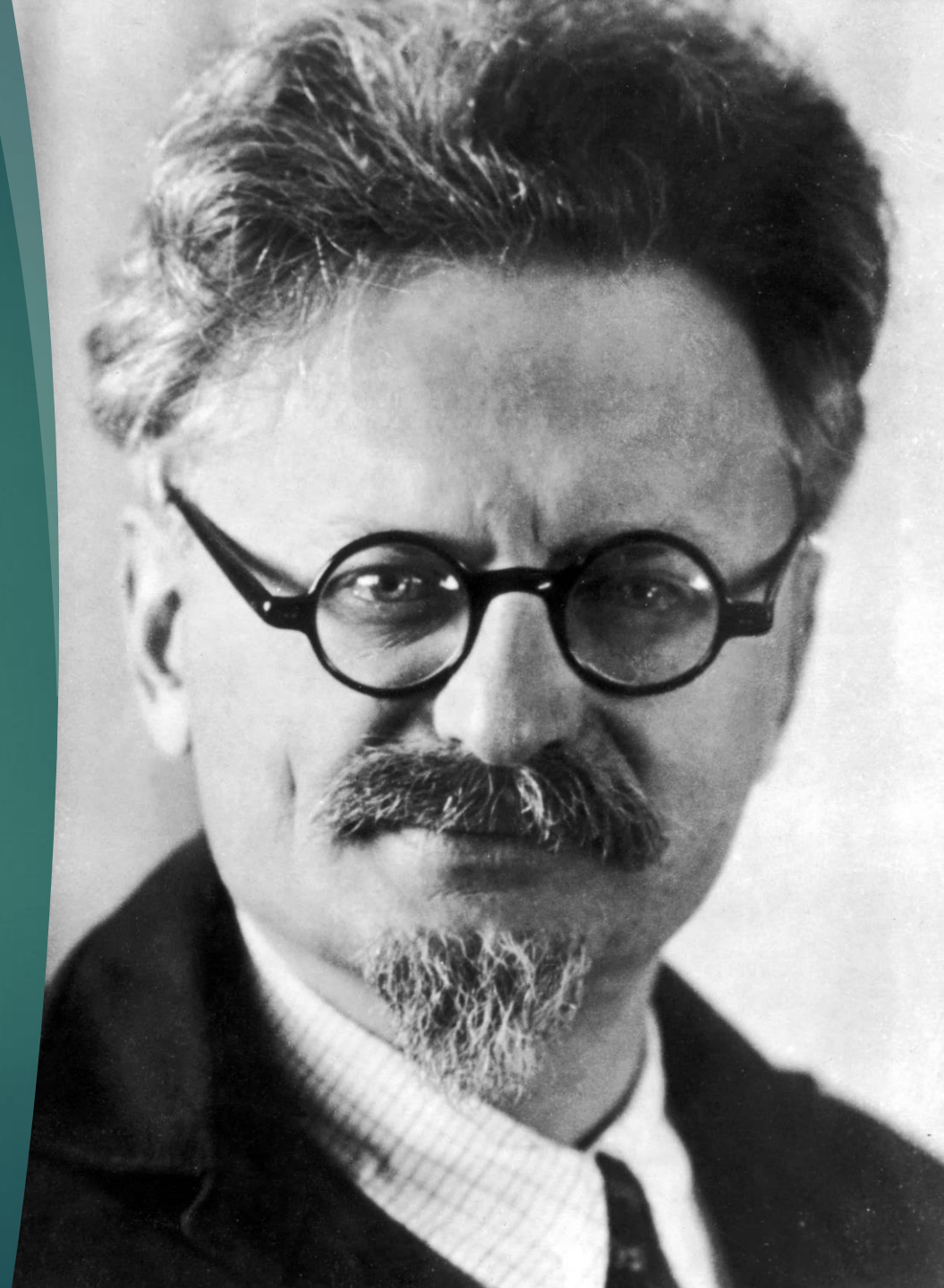
- ▶ Other workers revolt
- ▶ You stay home
- ▶ Everyone gets the “Brave New World

## If the revolution fails

- ▶ Other workers revolt
- ▶ You stay home
- ▶ Old system remains

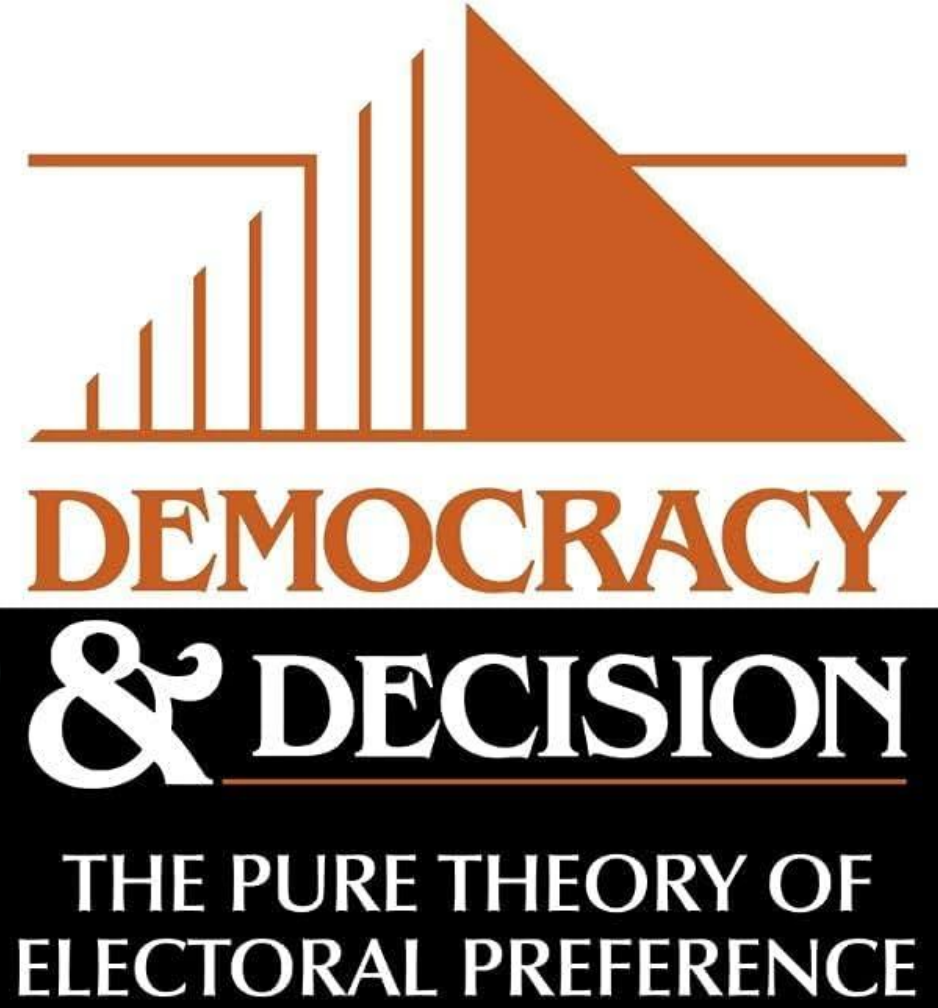
# Then why do some people choose to revolt at all?

- ▶ **Not** all people are equally indecisive if they join the revolution
  - ▶ Most successful revolutions in history started as **palace coups**
- ▶ There are many circumstances where joining the revolution will be **personally** beneficial despite the risk, beyond the general benefits given to all
- ▶ **Trotsky example**



# Decisiveness

- ▶ A voter is only decisive if the winner wins by a single vote
- ▶ In all other circumstances, the vote isn't decisive because you could have stayed home and nothing would have changed
- ▶ Please read Brennan and Lomasky for the binomial formula and calculating decisiveness



Geoffrey Brennan

Loren Lomasky

# Math for Decisiveness Part one

- ▶ Suppose there are  $(2n+1)$  voters
  - ▶ Assume an odd number of voters
  - ▶ Now assume that everyone but yourself votes “for” with probability  $p$  and “against” with the probability  $(1-p)$

Then using the binomial theorem:  $probability(tie) = \frac{1}{\sqrt{\pi n}} (4p - 4p^2)^n$

- From this formula, we can see the probability of a tie falls as the number of voters other than yourself increases. Why?

1.  $\frac{1}{\sqrt{\pi n}}$  gets smaller as  $n$  gets larger
2.  $(4p - 4p^2)$  is less or equal to 1. When you raise a number less than 1 to a larger power, it must get smaller.

# Math of Decisiveness Part 2

$$probability(tie) = \frac{1}{\sqrt{\pi n}} (4p - 4p^2)^n$$

- ▶ Remember, the number of voters is  $2n+1$ , not  $N$

This formula also says that as the probability of voter support goes above or below .5, the probability of a tie falls. Why?

1. When  $p=0$ ,  $(4p - 4p^2) = 0$ ; when  $p=1$ ,  $(4p - 4p^2) = 0$  too. In between  $p=0$  and  $p=1$ , this term rises to a peak of  $(4p - 4p^2) = 1$  when  $p=.5$ , then falls.

- ▶ Intuitively, the more lopsided the opinion on a topic is, the less likely there is to be a tie if everyone agrees a tie of all votes but yours is impossible, therefore decisiveness is impossible

XV. Calculating the Probability of Decisiveness, II: Examples

A. Let's work through some examples. Remember that the number of voters is  $(2n+1)$ , not  $n$ .

B. Example #1: The close tenure vote.  $n=10$ ,  $p=.5$ .

$$\text{probability}(\text{tie}) = \frac{1}{\sqrt{10\pi}} (4 * .5 - 4 * .25)^{10} = \frac{1}{5.60} (1)^{10} = \frac{1}{5.60} = .178, \text{ or } 17.8\%.$$

C. Example #2: The close county election.  $n=5,000$ ,  $p=.51$ .

$$\text{probability}(\text{tie}) = \frac{1}{\sqrt{5000\pi}} (4 * .51 - 4 * .2601)^{5000} = \frac{1}{125} (.9996)^{5000} = \frac{1}{125} .1353 = .0011,$$

or a little more than 1-in-1000.

D. Example #3: The moderately close county election.  $n=5000$ ,  $p=.53$ .

$$\text{probability}(\text{tie}) = \frac{1}{\sqrt{5000\pi}} (4 * .53 - 4 * .2809)^{5000} = \frac{1}{125} (.9964)^{5000} = \frac{1}{125} 1.47 * 10^{-8} = 1.18 * 10^{-10}$$

, a little less than 1-in-8 billion.

E. Example #4: The moderately close state election.  $n=2,000,000$ ,  $p=.51$ .

$$\text{probability}(\text{tie}) = \frac{1}{\sqrt{2,000,000\pi}} (4 * .51 - 4 * .2601)^{2,000,000} = \frac{1}{2507} (.9996)^{2,000,000},$$

a chance smaller than 1 in  $10^{-100}$ ! (My calculator just says 0).

F. Upshot: For virtually any real-world election, the probability of casting the decisive vote is not just small; it is normally *infinitesimal*. The extreme observation that "You will not affect the outcome of an election by voting" is true for all practical purposes.

# Empirical Evidence for Collective Action Problems

- ▶ The survey shows how little participation there actually is in the American Political system
- ▶ Additionally, many experiments have been ran on collective action problems, and while the observed behavior wasn't 100% selfish, the level of cooperation in these experiments is still far below the group-income-maximizing level

| Activity                        | %     |
|---------------------------------|-------|
| Run for public office           | <1    |
| Active in parties and campaigns | 4-5   |
| Make campaign contribution      | 10    |
| Wear button or bumper sticker   | 15    |
| Write or call a public official | 17-20 |
| Belong to organization          | 30-33 |
| Talk politics to others         | 30-35 |
| Vote                            | 30-55 |