SOCIAL INTERACTIONS & ECONOMIC OUTCOMES

PMAP 8141: Economy, Society, and Public Policy

September 5, 2019

Fill out your reading report on iCollege

PLAN FOR TODAY

Measuring stuff correctly

Individuals and society

Game theory

Stags, hares, and prisoners

Fixing collective action problems

MEASURING STUFF CORRECTLY

INFLATION TARGETS

“Good” inflation = 2–3%

My dollar today buys more than my dollar tomorrow

Encourages spending

Deflation = really bad

My dollar today buys less than my dollar tomorrow

Encourages saving; discourages spending

Does GDP measure human wellbeing?

“There are no value judgments whatsoever attached to traditional GDP calculations”

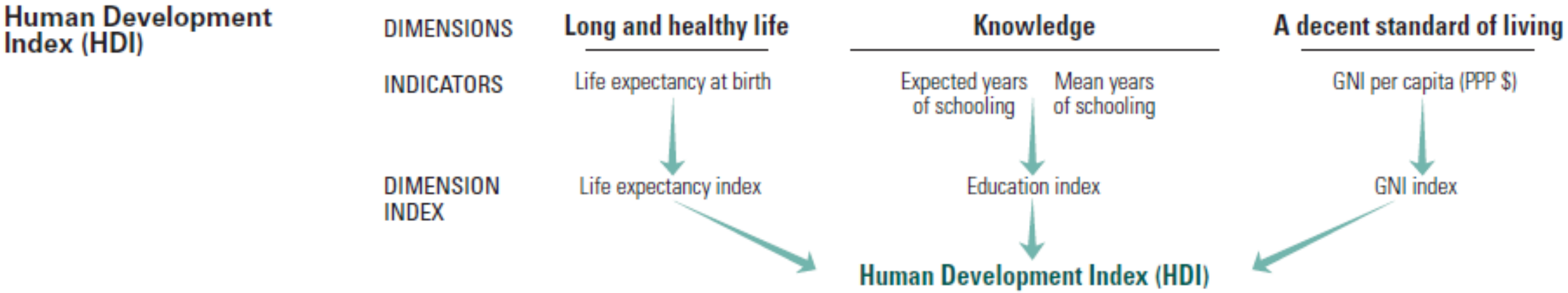
Naked Economics, p. 198

“Yet the Gross National Product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry, of the strength of our marriages, the intelligence of our public debate or the integrity of our public officials”

Robert F. Kennedy

Human Development Report **2016**

Human Development for Everyone



OTHER MEASURES

Unemployment rate

Poverty

Size of government

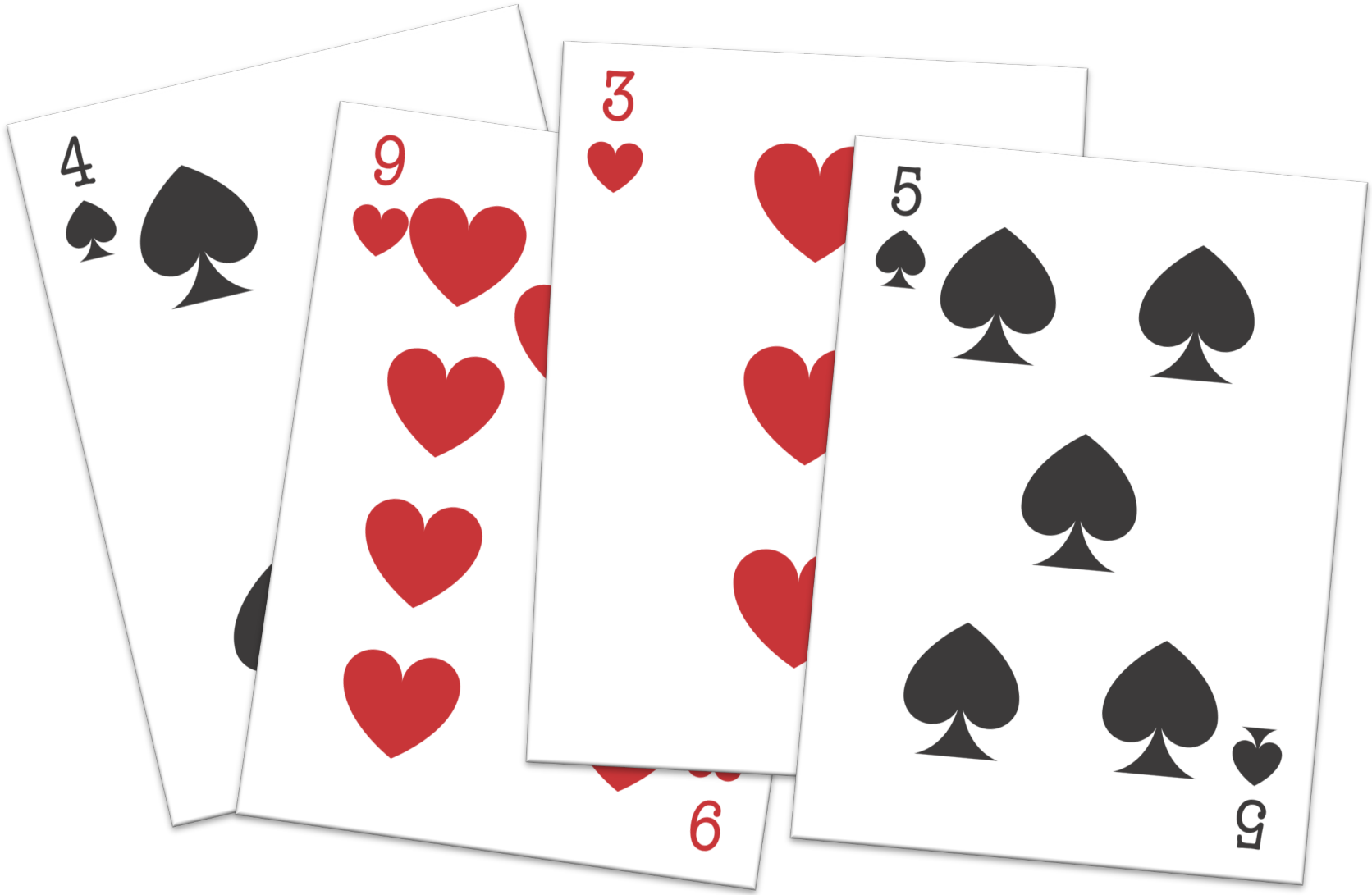
Budget surplus/deficit

BEST ALTERNATIVE?

GDP/capita is standard and probably will be for a looong time

Excel time!

INDIVIDUALS AND SOCIETY


4
9
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PUBLIC GOODS

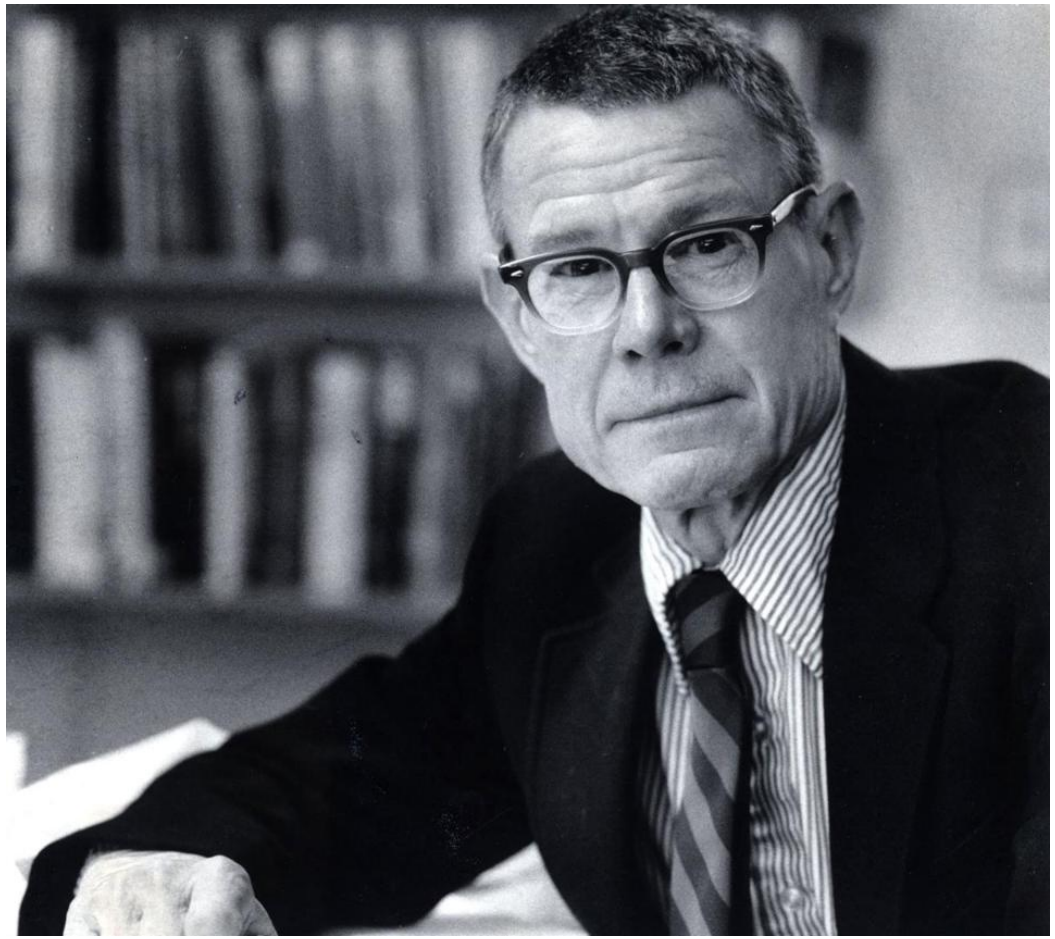
Non-excludable

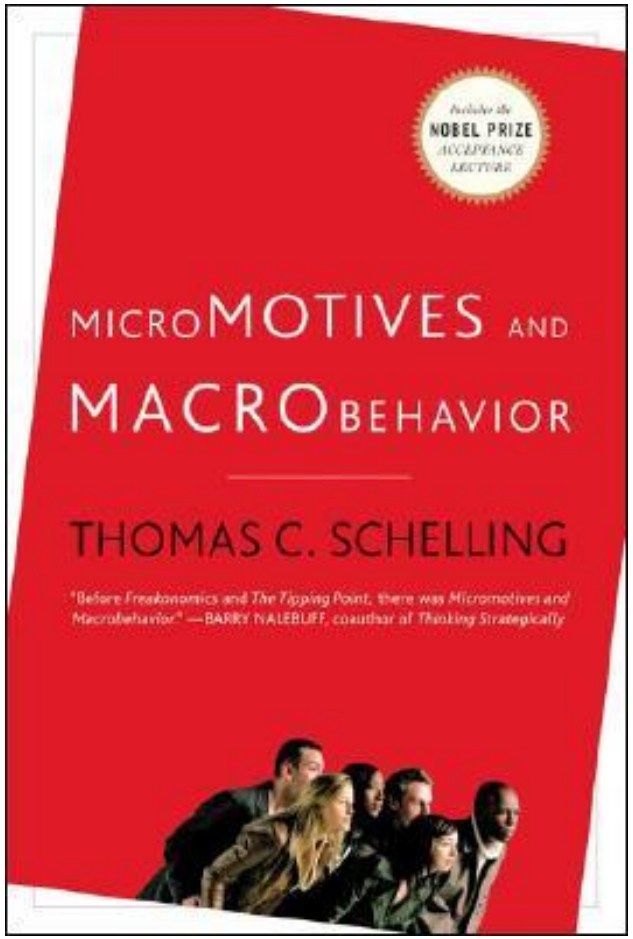
Not possible to stop others from using the good

Non-rivalrous

One person using the good doesn't prevent anyone else from using it

MICROMOTIVES & MACROBEHAVIOR





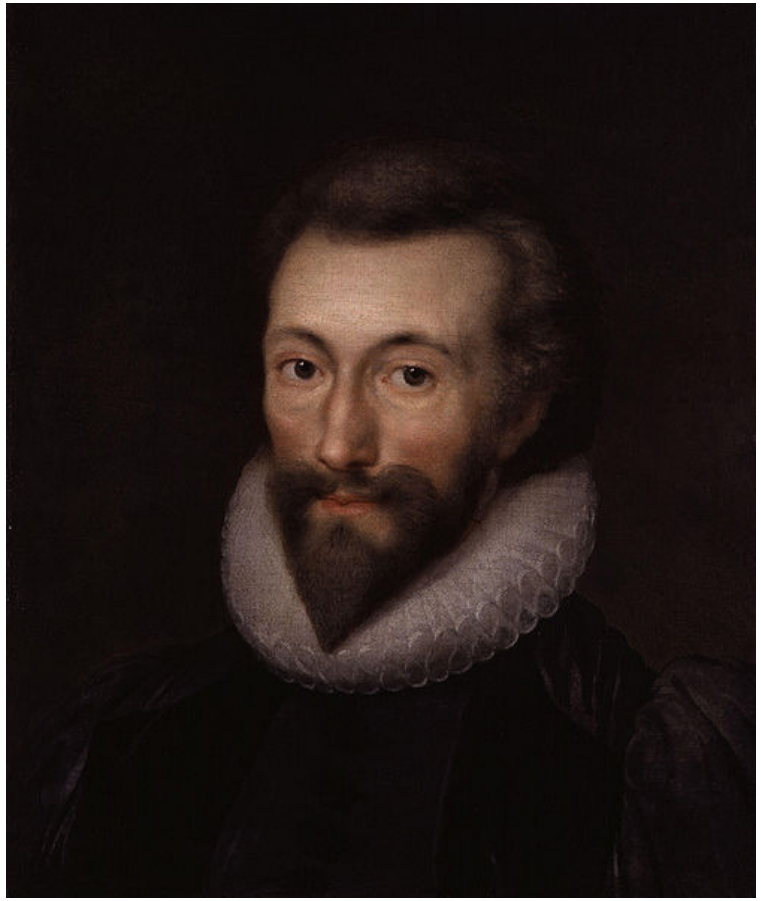
MICROMOTIVES & MACROBEHAVIOR

Perfectly rational individual behavior can create irrational and inferior social outcomes

Social dilemma

Collective action problem

No man is an island,
entire of itself;
every man is a piece of the continent,
a part of the main.
If a clod be washed away by the sea,
Europe is the less,
as well as if a promontory were.
as well as if a manor of thy friend's
or of thine own were.
Any man's death diminishes me,
because I am involved in mankind;
and therefore never send to know for
whom the bell tolls;
it tolls for thee.



John Donne
Meditation XVII
Devotions upon Emergent Occasions
1623

GAME THEORY

WHY DO THESE UN-FUN GAMES?

"Economics is the study of how people interact with each other… in providing for their livelihoods"

We need formal language + an analytical framework for looking at those interactions

KEY VOCABULARY

Game — Model of strategic interaction

Zero-sum — Only one winner

Non-zero-sum — Both players can win; requires cooperation

Pareto efficiency — Outcome can't be improved without hurting another player

STRATEGIES

Nash equilibrium — Choice where no player has incentive to change

Dominant — Choice where you gain no matter what the other player does

Pure — Choice you make every time

Mixed — You gain or lose based on probabilities of other player's choices

INVISIBLE HAND

		Bala	
		Rice	Cassava
Anil	Rice	1, 3	2, 2
	Cassava	4, 4	3, 1

Non-zero-sum

One dominant equilibrium

BACH OR STRAVINSKY

		Friend 2	
		Chinese	Italian
Friend 1	Chinese	2, 1	0, 0
	Italian	0, 0	1, 2

Non-zero-sum

Two equilibria

Mixed strategy

CHICKEN

		Racer 2	
		Keep going	**Swerve**
Racer 1	**Keep going**	**−100, −100**	**5, −5**
	Swerve	**−5, 5**	**0, 0**

Non-zero-sum

Two equilibria

Mixed strategy

PRISONER'S DILEMMA

		Bala	
		Magic bugs	**Poison**
Anil	**Magic bugs**	**3, 3**	**1, 4**
	Poison	**4, 1**	**2, 2**

Non-zero-sum

One dominant equilibrium

Not socially optimal!

STAGS, HARES, AND PRISONERS

COOPERATION IN PD LAND

Repetition + iteration

One-shot vs. repeated

Infinitization

Defect at t - 1

PD games underpredict voluntary cooperation

People cooperate even though the dominant strategy is always defect

STAG HUNT

		Bala	
		Hunt stag	**Hunt hare**
Anil	**Hunt stag**	**10, 10**	**0, 2**
	Hunt hare	**2, 0**	**2, 2**

Non-zero-sum

Two pure equilibria

Mixed strategy

Not socially optimal!

COOPERATION IN STAG HUNT LAND

The payoffs for cooperation are greater than the payoffs for defection

There’s still an incentive to defect

BETTER MODEL OF SOCIAL DILEMMAS

Climate change

Arriving on time

Points in soccer tournaments

Negative political campaigns

FIXING COLLECTIVE ACTION PROBLEMS

Perfectly rational individual behavior can create irrational and inferior social outcomes

WHAT STOPS US FROM COOPERATING?

Uneven payoffs

Lack of assurance

Dishonesty

Selfishness

These are all rational things that utility-maximizing people do!

HOW DO WE FIX THIS?

Altruism

Repetition and iteration

Infinitization **Punishment**

Norms **Institutions**

Public policy

TRAGEDY OF THE COMMONS

		Farmer 2	
		Use water normally	Double water use
Farmer 1	Use water normally	6, 6	2, 8
	Double water use	8, 2	3, 3

INSTITUTIONAL FIXES

Change payoffs so that normal water use is more valuable

Make water common property

Privatize the water and let one person control it