

Fairness & Efficiency

Session 4

PMAP 8141: Microeconomics for Public Policy
Andrew Young School of Policy Studies

Plan for today

Economic models

Pulling policy levers

Power and efficiency

Rawlsian fairness

Fairness

Economic models

Why tho?

Why the h*ck am I making you think about game theory?

The world is never this simple!

The predictions are obvious!

Models purposefully shrink the world so we can measure and predict things in it

No economic model can be a perfect description of reality. **But the very process of constructing, testing and revising models, forces economists and policymakers to tighten their views about how an economy works.** This in turn promotes scientific debate over what drives economic behavior and what should (or should not) be done to deal with market failures.

Sam Ouliaris, IMF

No economic model can be a perfect description of reality. **But the very process of constructing, testing and revising models, forces economists and policymakers to tighten their views about how a **anything** works.** This in turn promotes scientific debate over what drives economic behavior and what should (or should not) be done to deal with market failures.

Sam Ouliaris, IMF

Good models

Clear / parsimonious

Identify important relationships

Make good predictions

Improve communication

Useful

Pulling policy levers

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

Tragedy of the commons

		Farmer 2	
		Use water normally	Double water use
Farmer 1	Use water normally	6, 6	2, 4
	Double water use	4, 2	1.5, 1.5

Changing the payoffs leads to normal water use

Changes in taxes

		Firm owner	
		Pay normal tax	Hire lawyers for loopholes
Government	Current policy Moderate tax rate	100, 500	85, 495
	High tax rate	150, 450	90, 490

**What happens if
taxes go up?**

Changes in taxes

		Firm owner	
		Pay normal tax	Hire lawyers for loopholes
Government	Moderate tax rate	100,500	85,495
	Desired policy High tax rate	150,450	90,490

Nashes matter!

Government tries to get to
(High taxes, Pay normal rate)

Firms hire lawyers

New outcome is worse for everyone

Policies must be a Nash equilibrium

How to avoid unintended consequences

Policy change shouldn't change preferences in bad ways

Israeli daycare

NCLB testing

ACA part-time hours

Policies must be a Nash equilibrium

Power and efficiency

Power

**The ability to do what we want in
opposition to the intentions of others**

Who should decide?

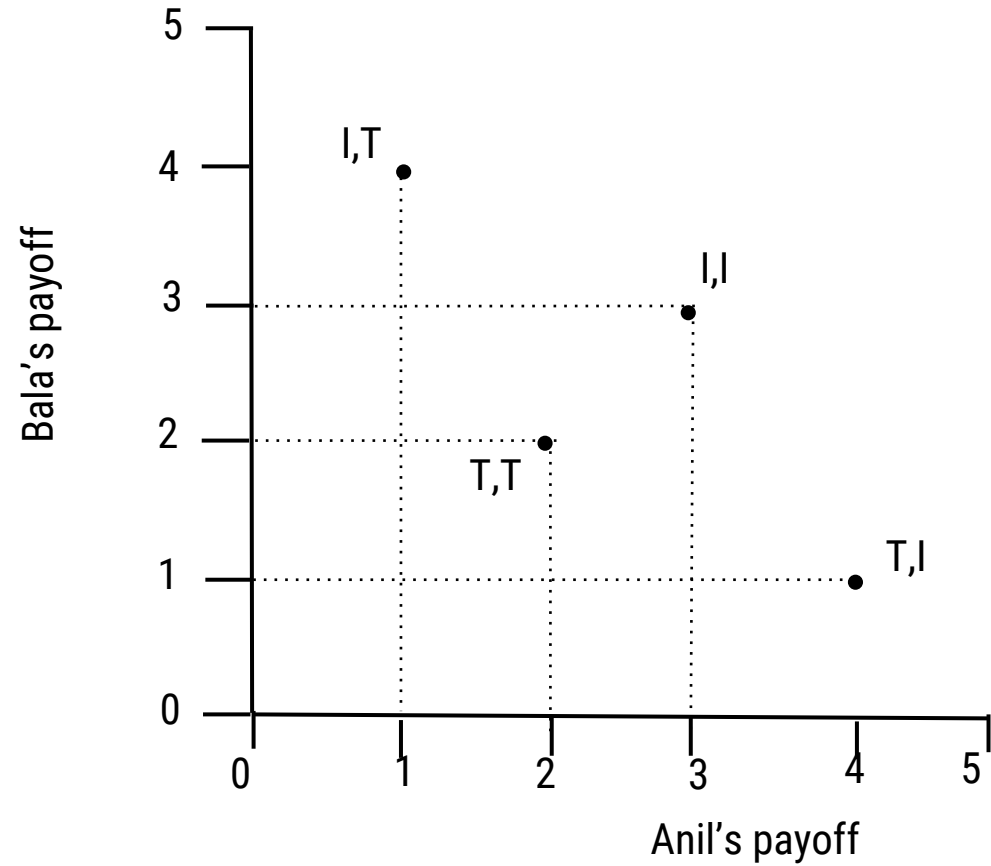
		Bala	
		Left	Right
Anil	Left	Live, Live	Die, Die
	Right	Die, Die	Live, Live

Pareto efficiency

No alternative allocation where one person would be better off and nobody would be worse off

The most economic pie is consumed without taking pieces away from others

		Bala	
		Magic bugs (I)	Poison (T)
Anil	Magic bugs (I)	3, 3	1, 4
	Poison (T)	4, 1	2, 2



I,I = Both use Integrated Pest Control (IPC)

I,T = Anil uses IPC, Bala uses Terminator

T,I = Anil uses Terminator, Bala uses IPC

T,T = Both use Terminator

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

Is Pareto the best standard?

There can be more than one
Pareto-efficient allocation (or none!)

There are no rankings

No consideration of power

Rawlsian fairness

Unemployed laborer

Group 1

Years of education: **10**

Family income this year: **\$8,000**

Total wealth (all assets): **\$3,000**

Age: **28**

You are an unemployed day laborer. Your skill level is low because you dropped out of high school to work and help your mother make ends meet. Because of a slowdown in the construction industry, you were laid off two months ago and have not found another job. You do not have health insurance. you would like to find steady work and settle down.

Business executive

Group 4

Years of education: **18**

Family income this year: **\$450,000**

Total wealth (all assets): **\$2,500,000**

Age: **54**

You have worked your way up the corporate ladder and are now responsible for running the main airplane factory at XYZ Airlines. You're responsible for annual sales of \$300 million. You typically work 12 hours a day and must travel for extended periods. The factory employs 2,000 people, many of them in unskilled jobs. It is difficult to find new workers in your region without substantially raising wages. You would like to become the company president some day.

Tax rate

Unemployment assistance

Immigration laws

Health insurance

Issue 1: Raising government revenue

Progressive income tax

People with higher family incomes pay a higher marginal tax rate.

Progressive income tax

Flat tax

15% tax rate on all incomes.

Flat tax

Issue 2: Unemployment assistance

Modest assistance

Unemployed workers get 12 weeks of support while they search for a job. Taxes on businesses pay for assistance.

Modest assistance

Generous assistance

Unemployed workers get 24 weeks of support and job training while they search for work. Taxes on businesses pay for assistance.

Generous assistance

Issue 3: Immigrant workers

Guest-worker law

Law allows firms and households to hire immigrant workers in the United States without requiring US citizenship.

Guest-worker law

Stronger immigration law

Stronger law makes it harder to hire certain immigrants by imposing severe fines on firms and households that hire workers in the United States who do not have US citizenship.

Stronger immigration law

Issue 4: Health insurance

Private insurance

People buy health insurance on their own, choosing coverage and doctors. People without health insurance receive little care.

Private insurance

National insurance

Every citizen receives a standard level of health care defined by the government and paid for by taxes. Choice of doctors and coverage is restricted.

National insurance

Annual income	Tax rate
\$0–\$10,000	0%
\$10,001–\$50,000	10%
\$50,001–\$100,000	20%
\$100,001–\$300,000	30%
\$300,000–\$∞	50%

Jody earns \$80,000 a year.

She pays 0% on first \$10,000

She pays 10% on the next \$40,000

She pays 20% on the last \$30,000

Total tax:

1: Progressive tax rate

Increasing marginal rates

2: Flat tax

15% regardless of income

$\$80,000 \times 15\% = \mathbf{\$12,000}$

$\$10,000 \times 0\% = \0

$\$40,000 \times 10\% = \$4,000$

$\$30,000 \times 20\% = \$6,000$

$\$0 + \$4,000 + \$6,000 = \mathbf{\$10,000}$

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National insurance

Unknown

Group 1

Age: ?

Years of education: ?

Gender: ?

Family income this year: ?

Occupation: ?

Total wealth (all assets): ?

Marital status: ?

Unknown

Group 2

Age: ?

Years of education: ?

Gender: ?

Family income this year: ?

Occupation: ?

Total wealth (all assets): ?

Marital status: ?

Tax rate

Unemployment assistance

Immigration laws

Health insurance

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Private insurance

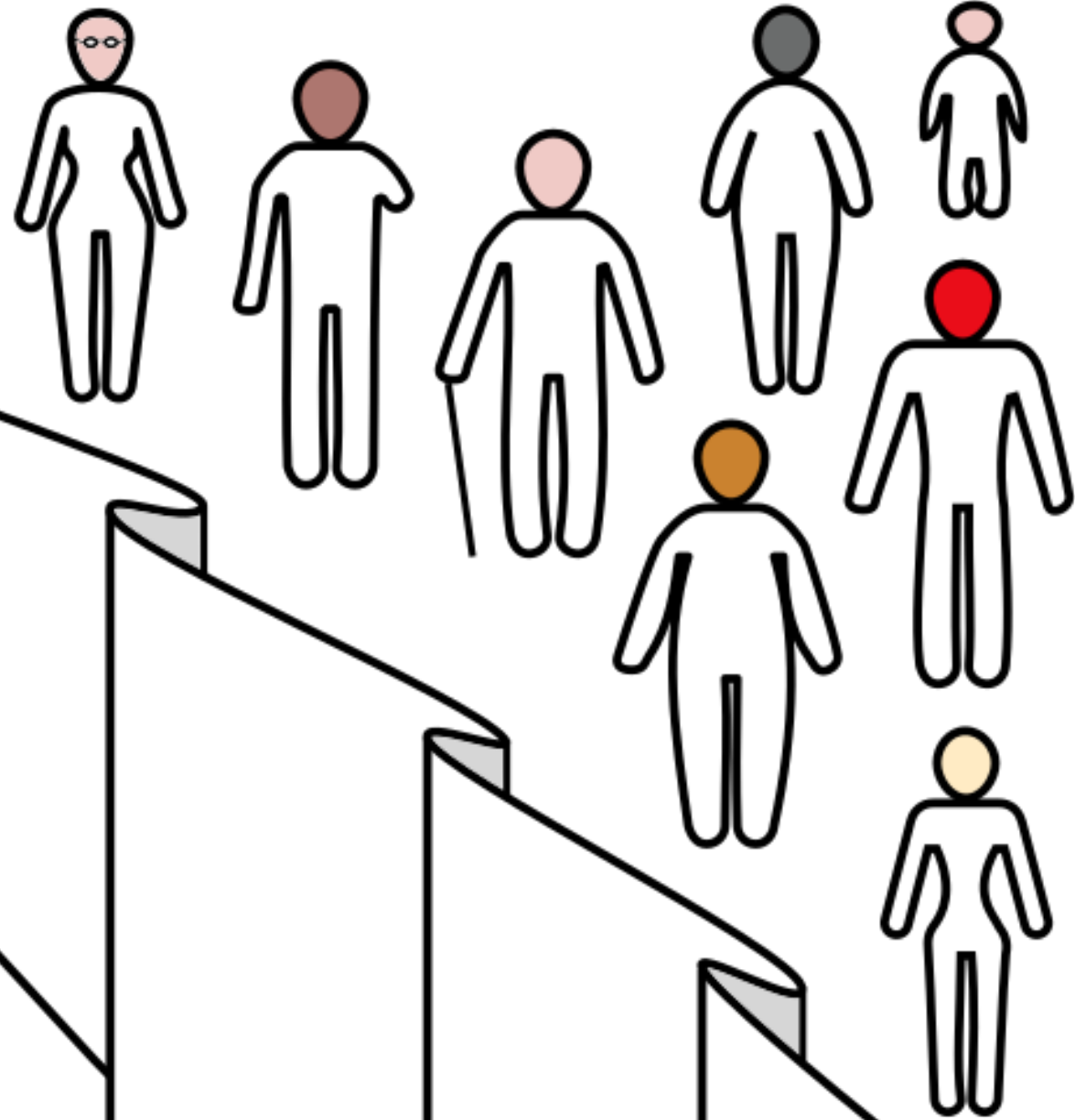
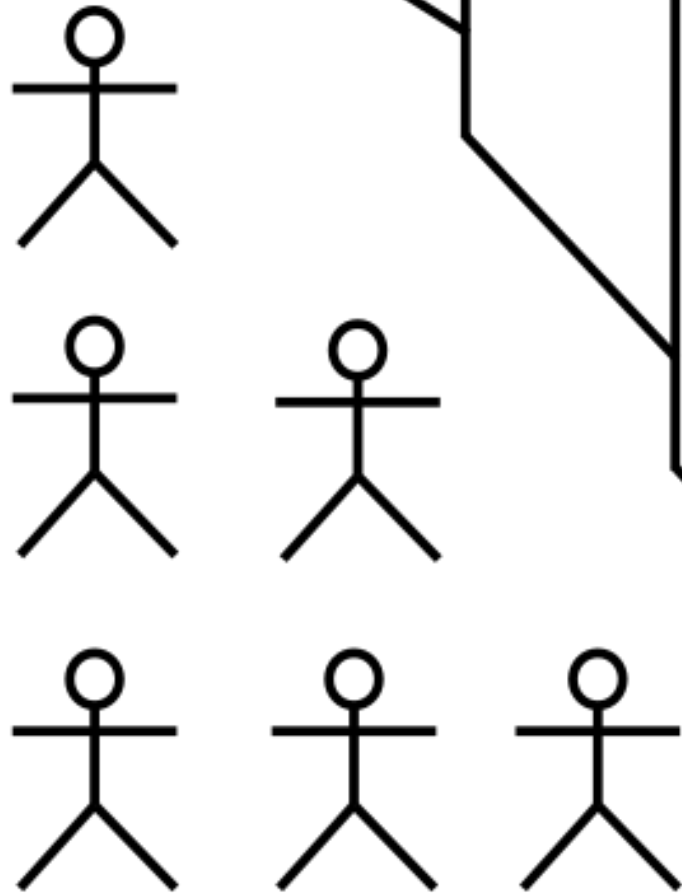
National insurance

Every citizen receives a standard level of health care defined by the government and paid for by taxes. Choice of doctors and coverage is restricted.

National insurance

Veil of ignorance

Original position



Fairness

Is Pareto the best standard?



Andrew Baker

@Andrew__Baker

Following



Love the fact that some econs are figuring out that pareto efficiency is one of those things overwhelmingly accepted by economists that most of the general population doesn't actually value.

3:50 PM - 25 Jan 2019

1 Retweet 10 Likes



Fairness matters

Incorporating Fairness into Game Theory and Economics

By MATTHEW RABIN*

People like to help those who are helping them, and to hurt those who are hurting them. Outcomes reflecting such motivations are called fairness equilibria. Outcomes are mutual-max when each person maximizes the other's material payoffs, and mutual-min when each person minimizes the other's payoffs. It is shown that every mutual-max or mutual-min Nash equilibrium is a fairness equilibrium. If payoffs are small, fairness equilibria are roughly the set of mutual-max and mutual-min outcomes; if payoffs are large, fairness equilibria are roughly the set of Nash equilibria. Several economic examples are considered, and possible welfare implications of fairness are explored. (JEL A12, A13, D63, C70)

Most current economic models assume that people pursue only their own material self-interest and do not care about “social” goals. One exception to self-interest which has received some attention by economists is simple altruism: people may care not only about their own well-being, but also about

are also motivated to hurt those who hurt them. If somebody is being nice to you, fairness dictates that you be nice to him. If somebody is being mean to you, fairness allows—and vindictiveness dictates—that you be mean to him.

Clearly, these emotions have economic

JOURNAL ARTICLE

Incorporating Fairness into Game Theory and Economics

Matthew Rabin



The American Economic Review

Vol. 83, No. 5 (Dec., 1993), pp. 1281-1302 (22 pages)

Published by: [American Economic Association](#)

Efficiency vs. equity

Efficiency

The most economic
pie is consumed

Equity / Fairness / Justice

It matters who consumes
how much of the pie



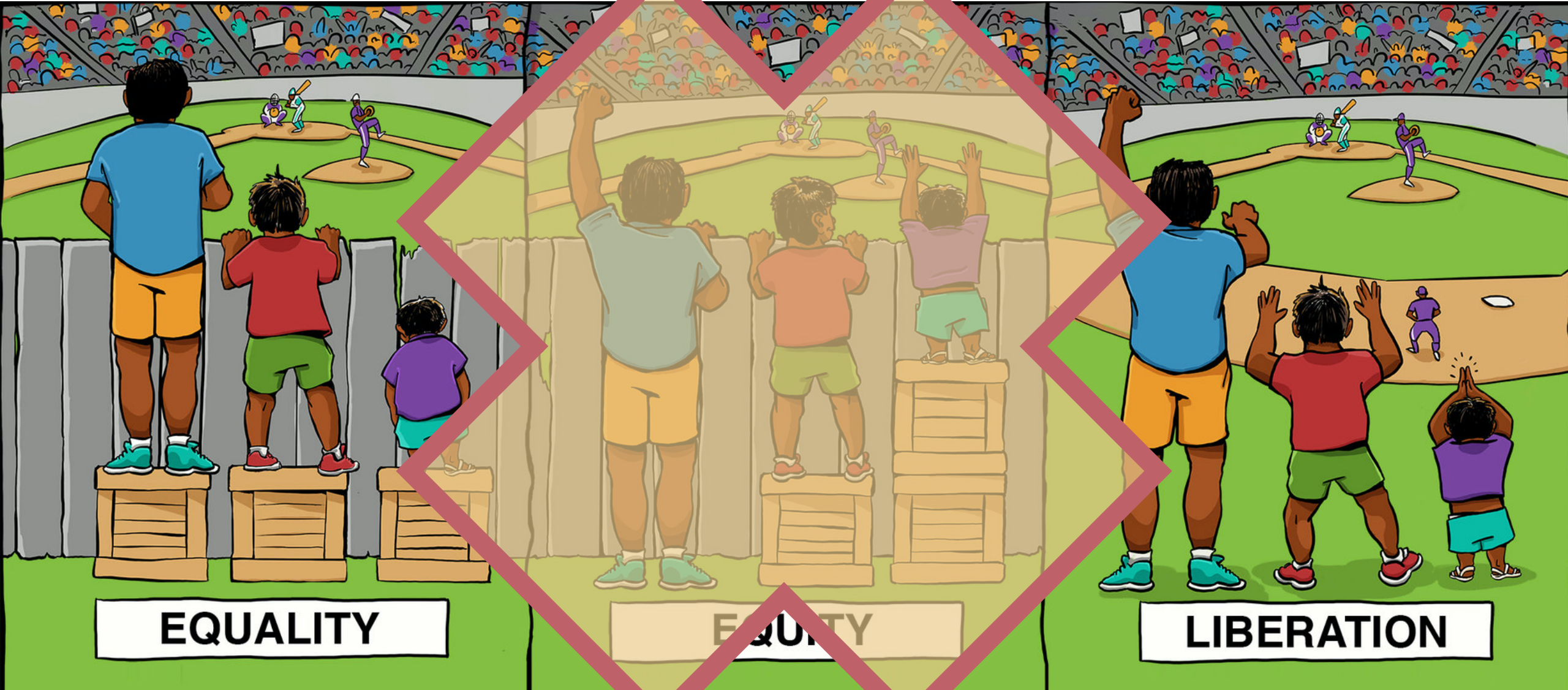
EQUALITY



EQUITY



LIBERATION



EQUALITY

EQUITY

LIBERATION

The graphic is memorable, but implies that the inequities we're trying to fix are a choice (where they're standing) or inherently biological (height)

“When you plant lettuce, if it does not grow well, you don't blame the lettuce. You look for reasons it is not doing well. It may need fertilizer, or more water, or less sun. You never blame the lettuce.”

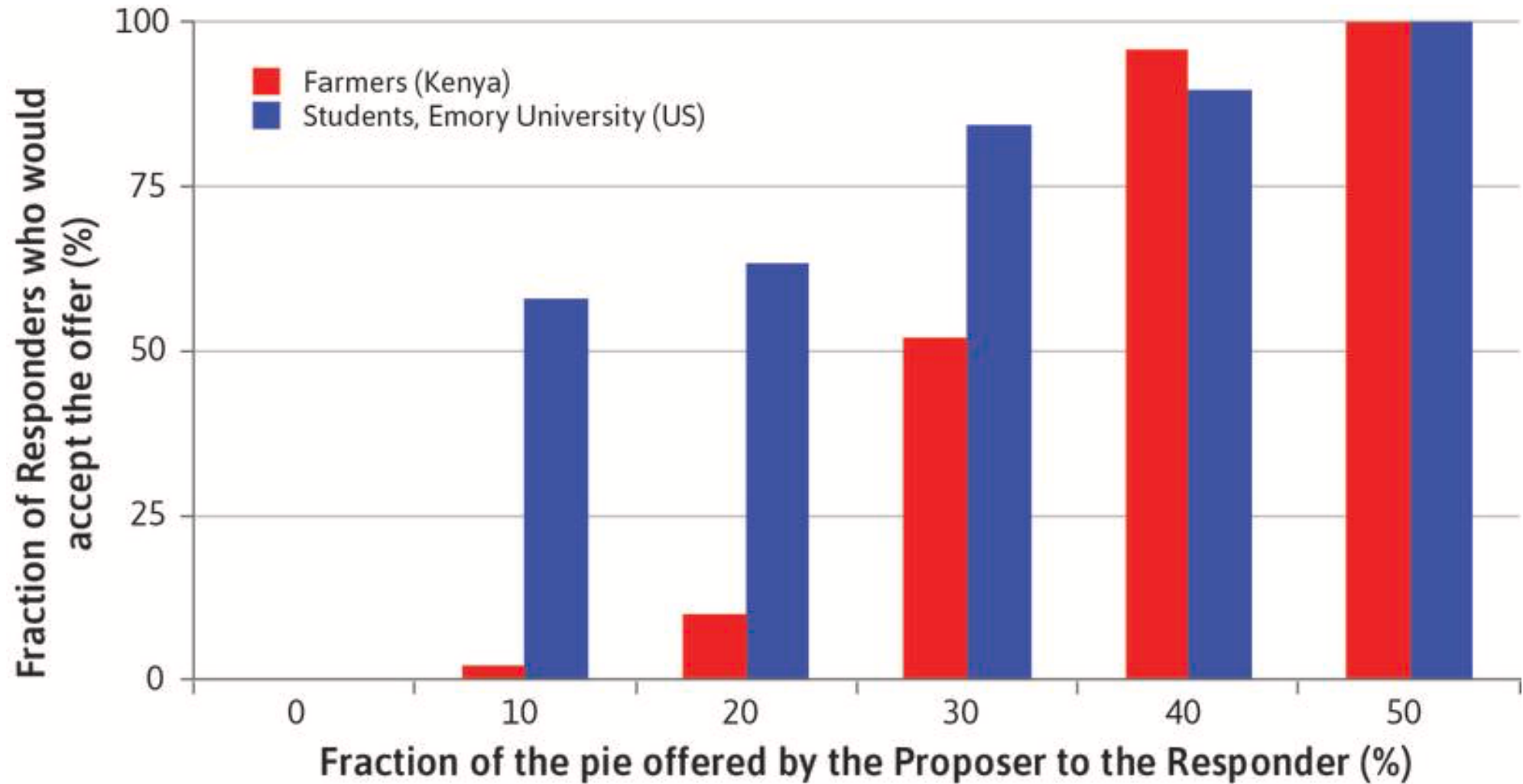
Thích Nhất Hạnh

The ultimatum game

Most rational, most efficient outcome is to accept any offer

But this doesn't happen!

The ultimatum game



What counts as fair?

Substantive fairness

What the allocation looks like

Procedural fairness

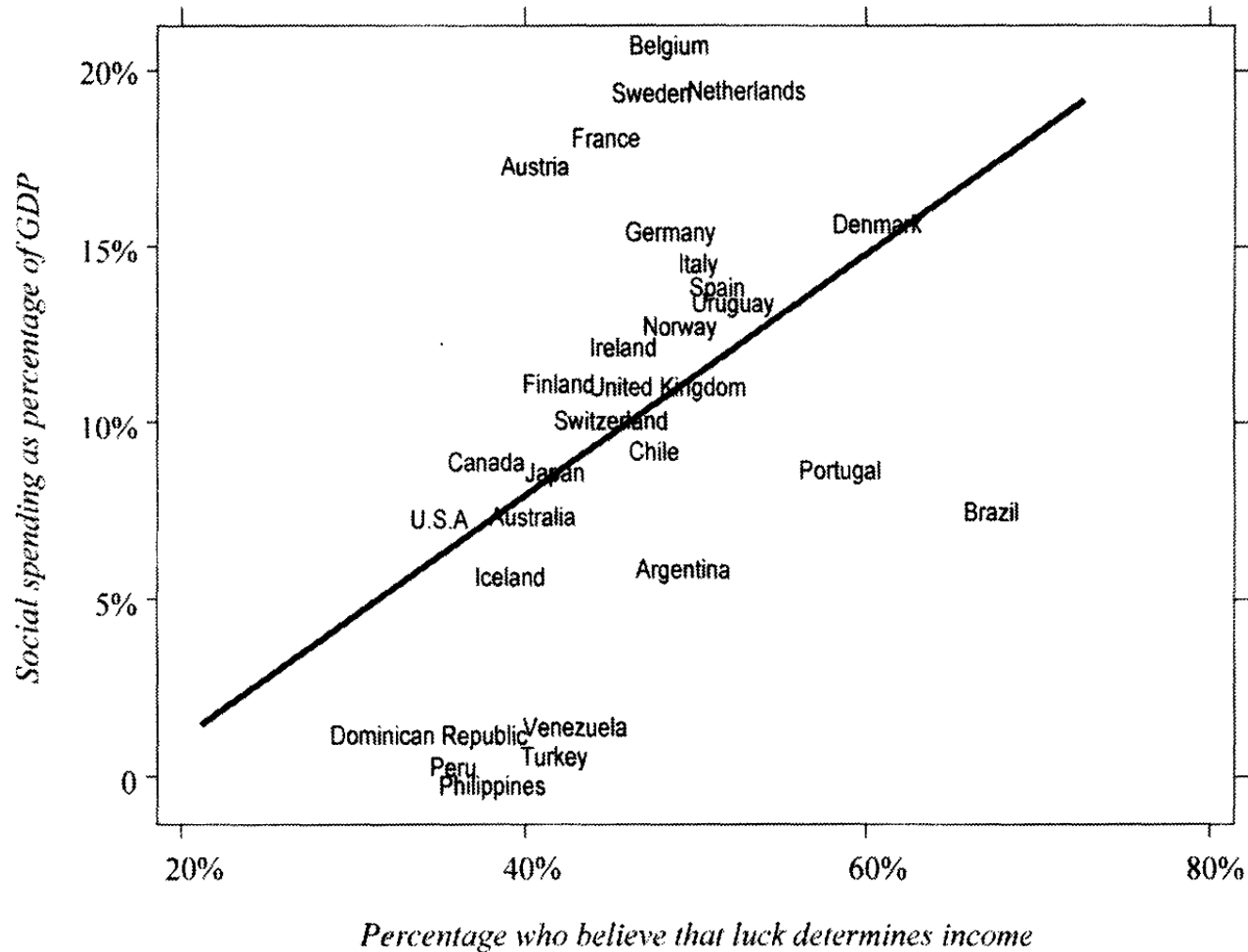
How the allocation got there

Veil of ignorance fairness

How do we decide what's fair?

Social norms

Luck, norms, and safety nets



Our analysis thus sheds some light on why differences in attitudes toward the market mechanism are so rooted in American and European cultures. In Europe, opportunities for wealth and success have been severely restrained by class differences at least since medieval times.²⁷ At the time of the extension of the franchise, the distribution of income was perceived as unfair because it was generated more by birth and nobility than by ability and effort. The “invisible hand” has frequently favored the lucky and privileged rather than the talented and hard-working. Europeans have thus favored aggressive redistributive policies and other forms of government intervention. In the “land of opportunity,” on the other hand, the perception was that those who were wealthy and successful had “made it” on their own. Americans have thus chosen strong property protection, limited regulation, and low redistribution, which in turn have resulted in fewer distortions, more efficient market outcomes, and a smaller effect of “luck.” Today, the “self-made man” remains very much an American “icon”; and Americans remain more averse to government intervention than Europeans.

Luck, norms, and safety nets

Strong Reciprocity and the Welfare State

Christina M. Fong, Samuel Bowles and Herbert Gintis*

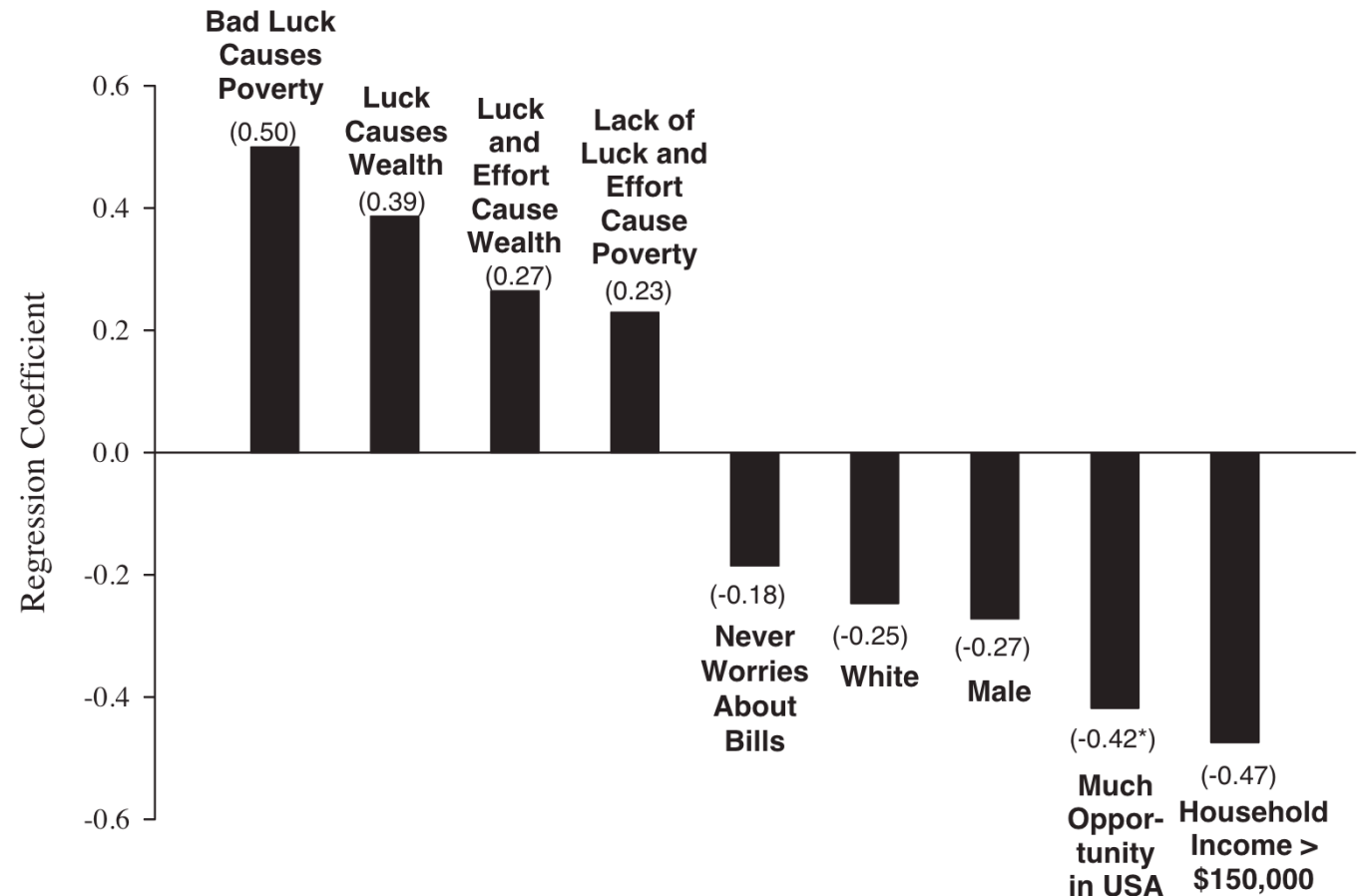
July 3, 2004

A man ought to be a friend to his friend and repay gift with gift.
People should meet smiles with smiles and lies with treachery.

The Edda, a 13th century collection of Norse epic verse.

1 Introduction

The modern welfare state is a remarkable human achievement. In the advanced economies, a substantial fraction of total income is regularly transferred from the better off to the less well off, and the governments that preside over these transfers are regularly endorsed by publics (Atkinson 1999). The modern welfare state is thus the most significant case in human history of a voluntary egalitarian redistribution of income among total strangers. What accounts for its popular support?





Is international trade efficient?

Is international trade just/fair?