

Income Distribution and Health

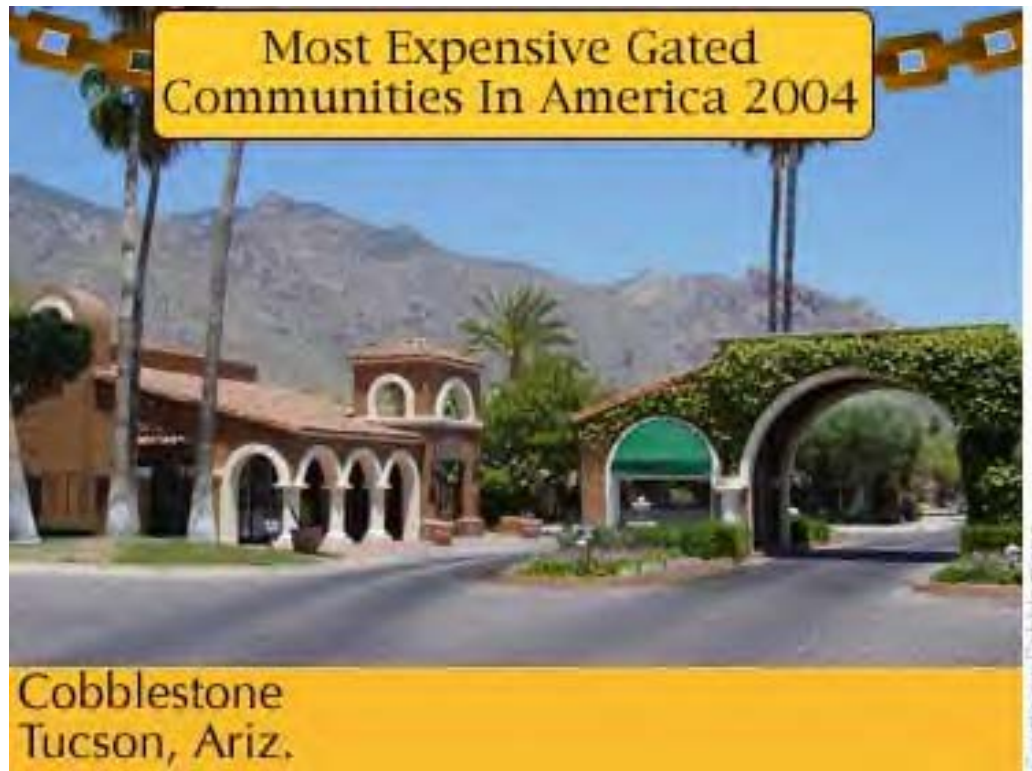
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So What?

- Rising crime and violence
- Increased economic segregation
- Erosion of social cohesion



Price range of homes for sale: \$13.5 million

Number of homes in community: 120 home sites

Approximate size range of homes: 3,500 to 31,000 square feet

Amenities: 24-hour security

Tucson realtors know Cobblestone as “The Toughest Gate”, where even potential buyers must be met at guard post and chauffeured in a realtor’s car. For \$13.5 million, the top property, known as Campbell Cliffs, has a two-story gym, a six-car garage, and an indoor gun/archery range.

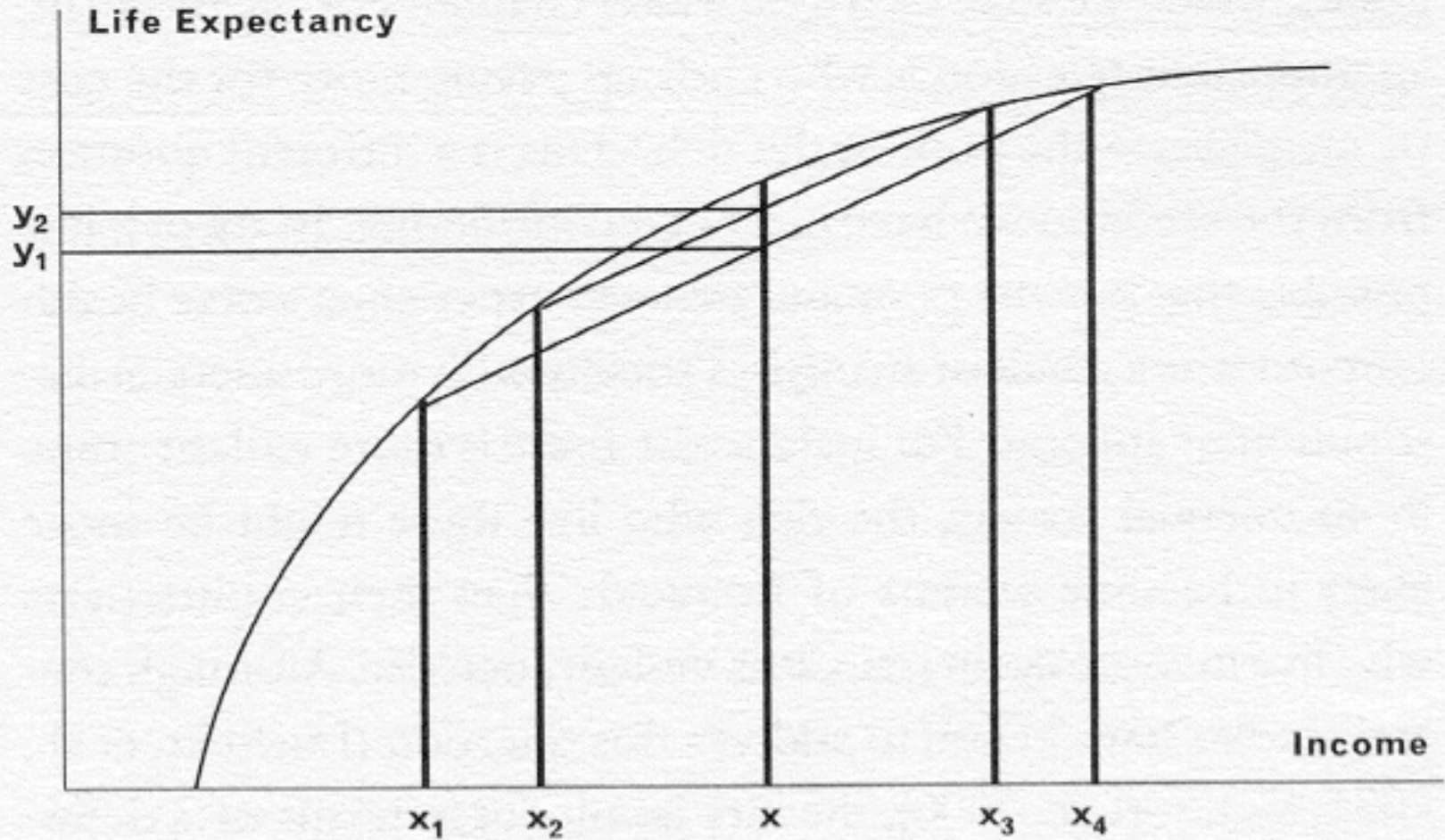
So What?

- Rising crime and violence
- Increased economic segregation
- Erosion of social cohesion
- **Worse health status**

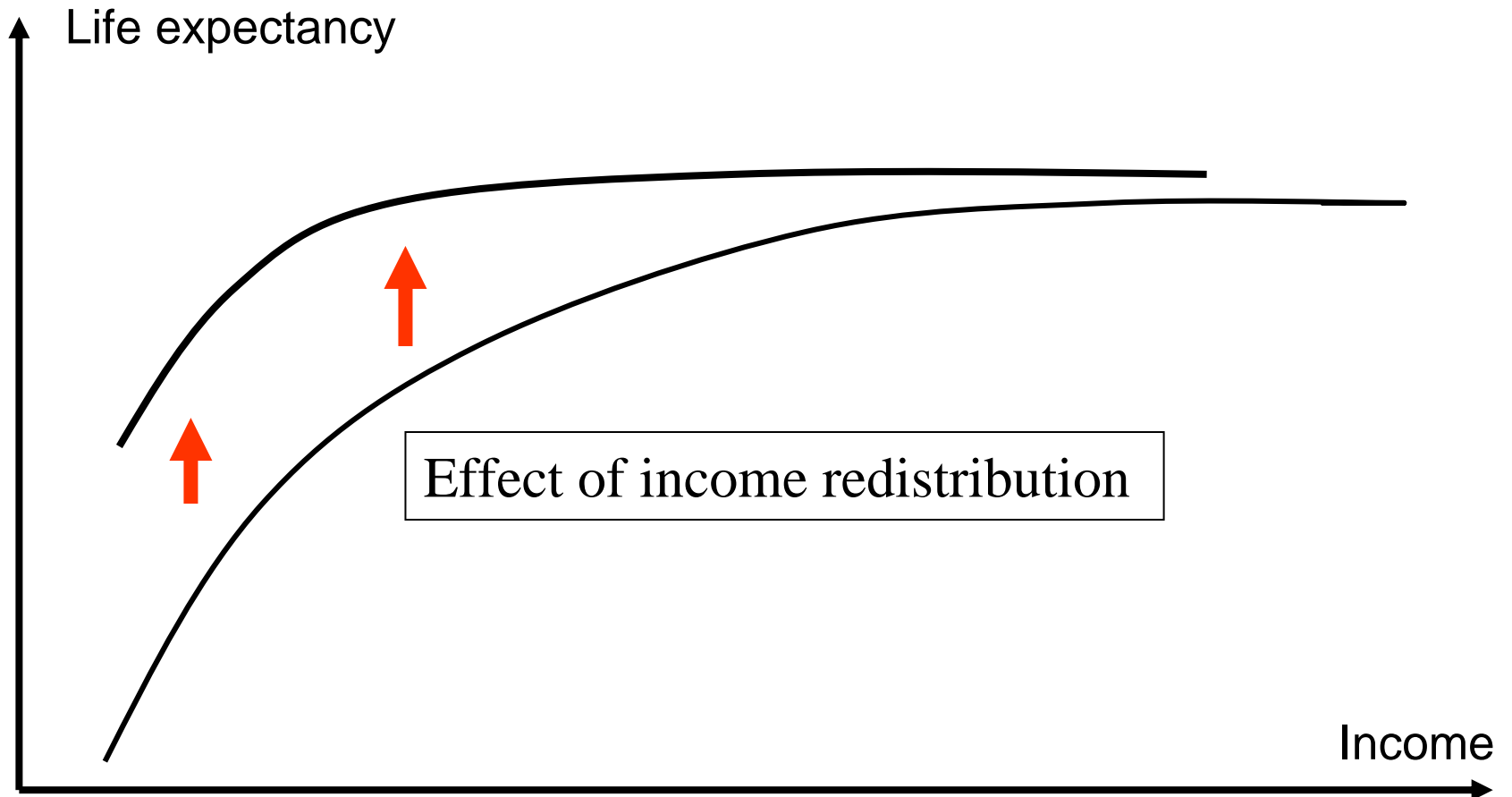
Two ways by which income inequality affects health

1. Concavity
2. Pollution

THE CONCAVE RELATIONSHIP BETWEEN INCOME AND LIFE EXPECTANCY



Pollution effect



NHIS-NDI follow-up, 1987-1995

546,888 persons – 19,379 deaths

State Gini	<0.324	1.00
	0.327-0.339	1.08 (1.02-1.16)
	0.340-0.355	1.10 (1.03-1.17)
	0.360-0.365	1.11 (1.02-1.19)
	0.367-0.374	1.12 (1.04-1.19)
Family income	High (> \$50,000)	1.00
	Middle	1.52 (1.43-1.61)
	Near Poor	2.14 (2.00-2.29)
	Poor	2.69 (2.48-2.91)

[Lochner, Kawachi et al. 2001]

Question 1.

Why dwell on a small effect?

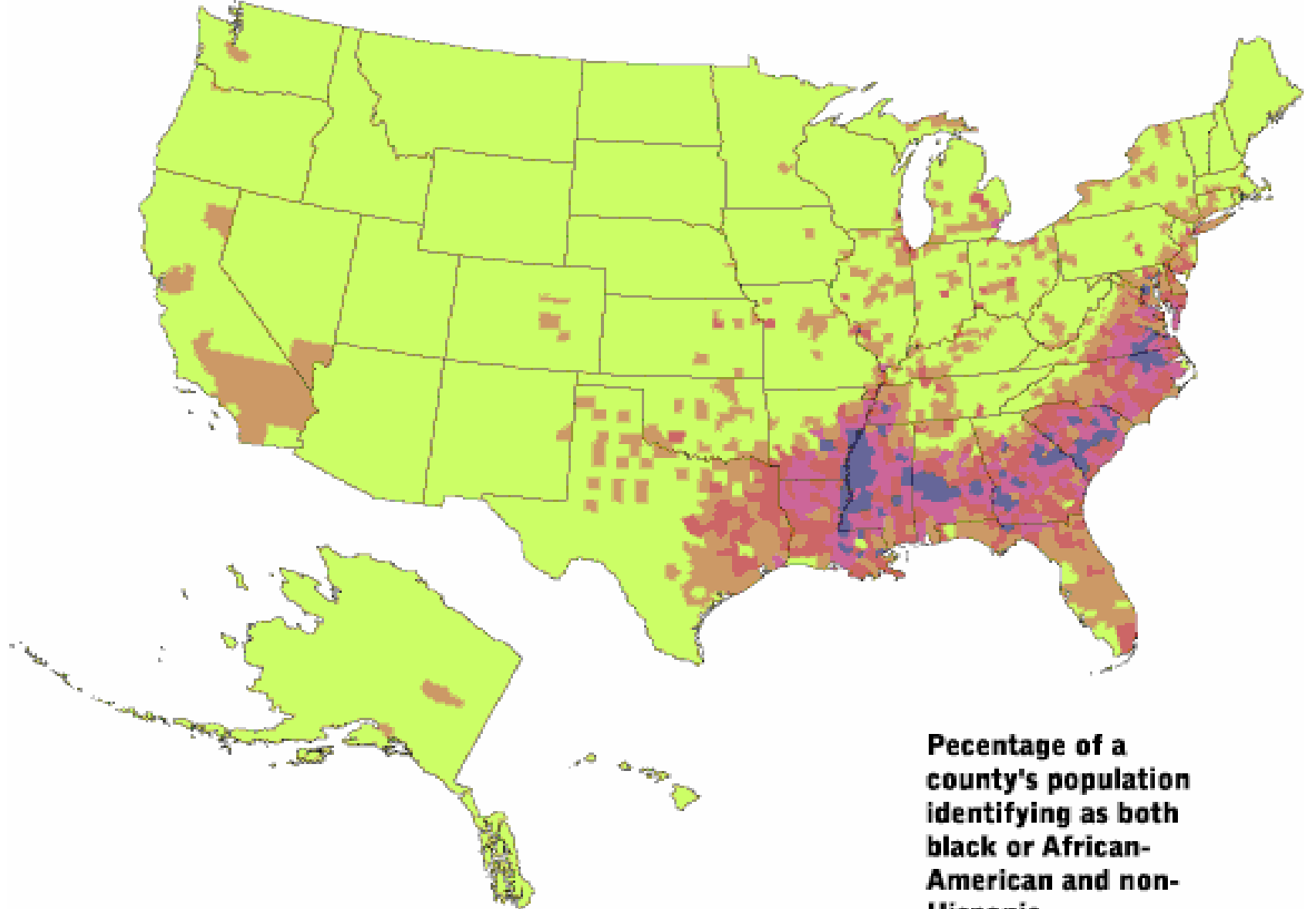
- Isn't the effect of poverty on health much bigger and a more urgent priority?

- Within developed countries, poverty afflicts 7-20 % of households.
- Income inequality affects everyone.
- Small relative risk, high exposure.

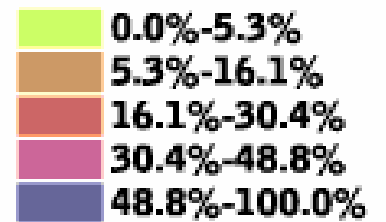
Question 2.

Isn't it all confounded by proportion black living within a state?

- Deaton/Lubotsky critique (*Soc Sci Med* 2003) – after control for % black residents in a state, the association of Gini with mortality disappears.
- Ecological analysis.



Percentage of a county's population identifying as both black or African-American and non-Hispanic.



Confounding by “Percent Black”?

Odds Ratios of Poor Health, CPS

Variable	Model 1	Model 2	Model 3
Black Race (individual)	1.54 (1.47-1.61)	--	1.54 (1.49-1.58)
Gini* (State)	1.39 (1.26-1.51)	1.28 (1.14-1.43)	1.30 (1.16-1.45)
% Black in State*	--	1.04 (1.01-1.07)	1.02 (0.99-1.05)

***for every 0.05 unit increase at state level**

Subramanian & Kawachi, *IJE*
2003;32:1022-28.

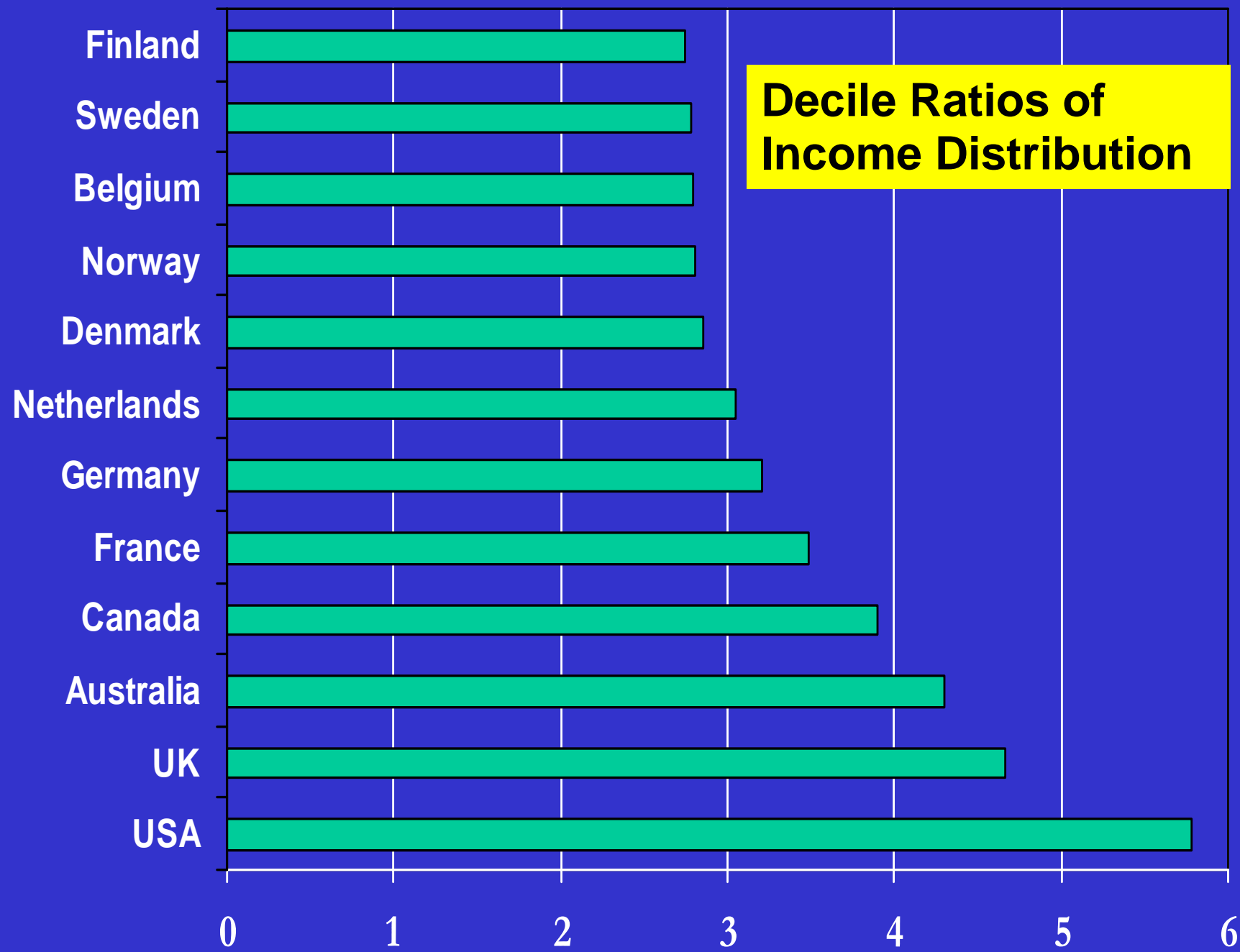
Question 3.

Isn't the international evidence on income inequality and health mostly null?

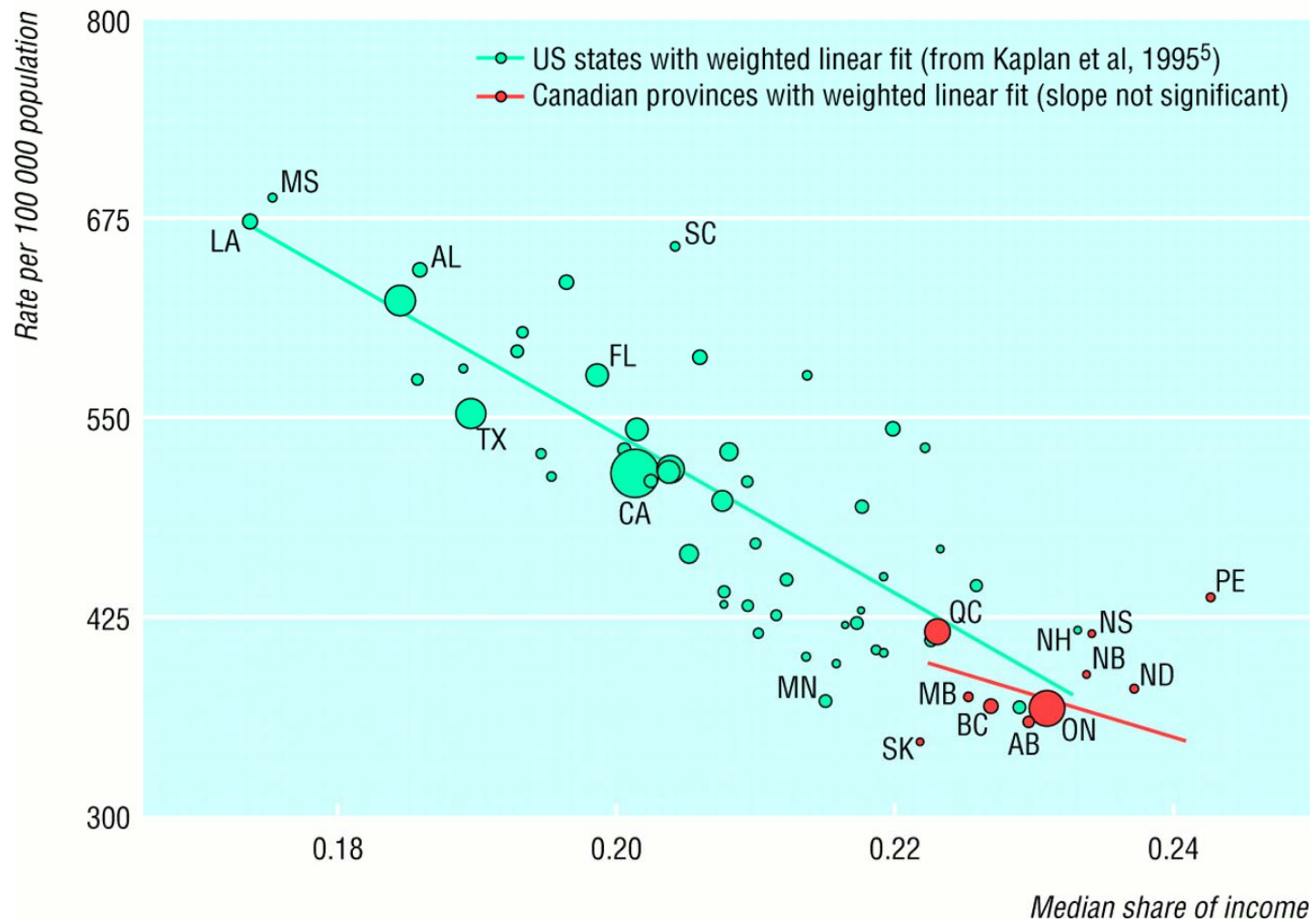
Null studies

- Japan (Shibuya et al. 2002)
- Denmark (Osler et al. 2002)
- Sweden (Gerdtham et al. 2001)
- New Zealand (Blakely et al. 2004)

**Decile Ratios of
Income Distribution**



Income Inequality and Mortality Rates in USA and Canada (Ross et al. 2000)



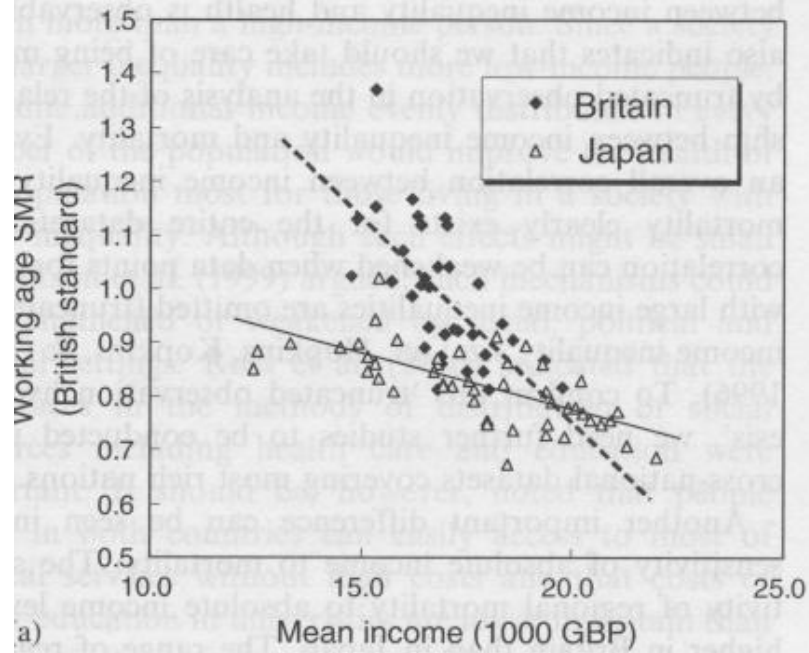


Geographical inequalities of mortality by income in two developed island countries: a cross-national comparison of Britain and Japan

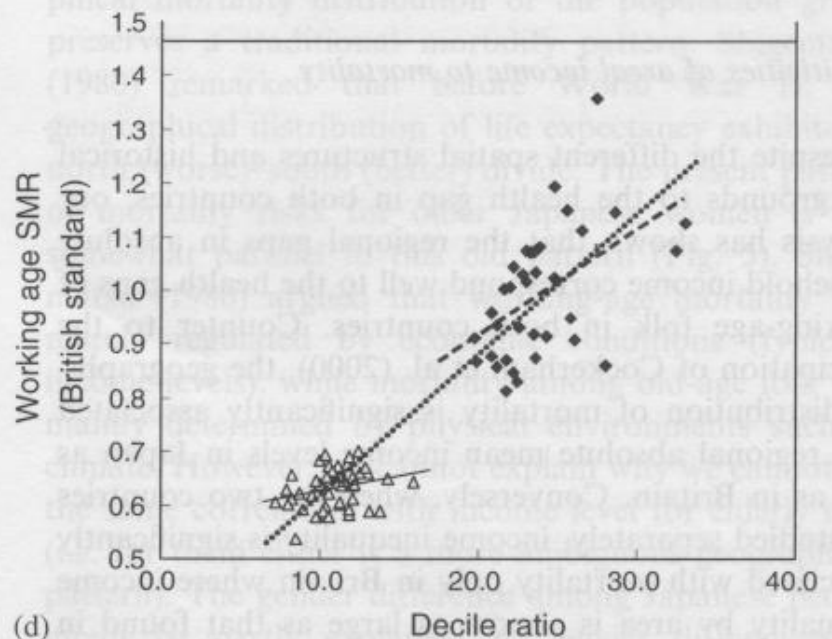
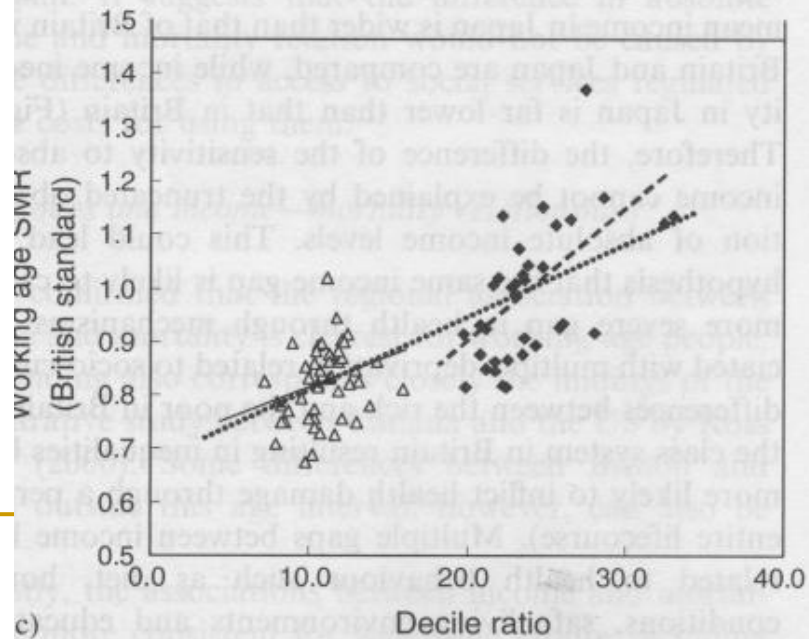
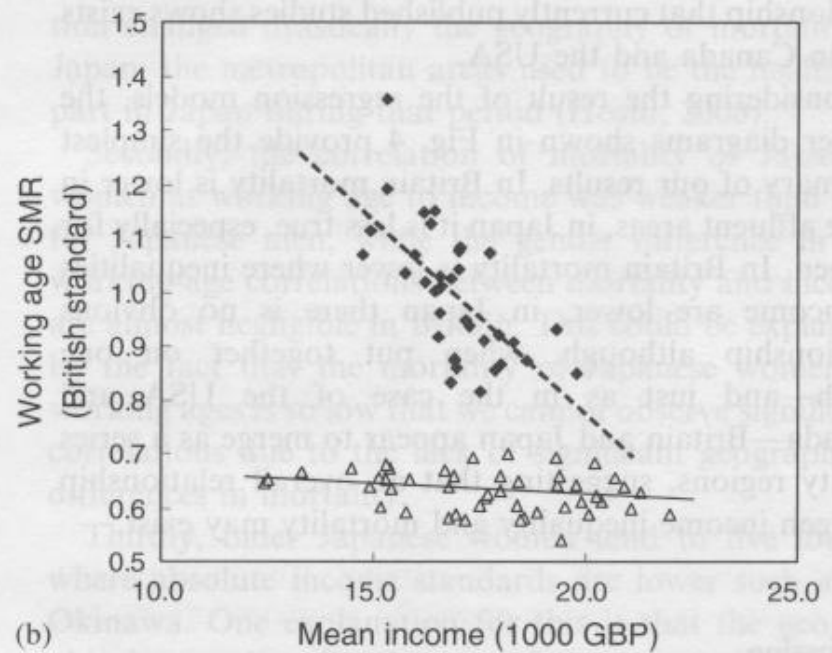
Tomoki Nakaya^{a,*}, Danny Dorling^b

- Ecological study of 30 British regions vs. 47 Japanese prefectures.
- Incomes converted to 1990 British £ PPP.
- Income inequality calculated as decile ratio.

Males



Females



CASEN Survey 2000

- 98,344 individuals nested within 61,978 households, nested within 285 communities

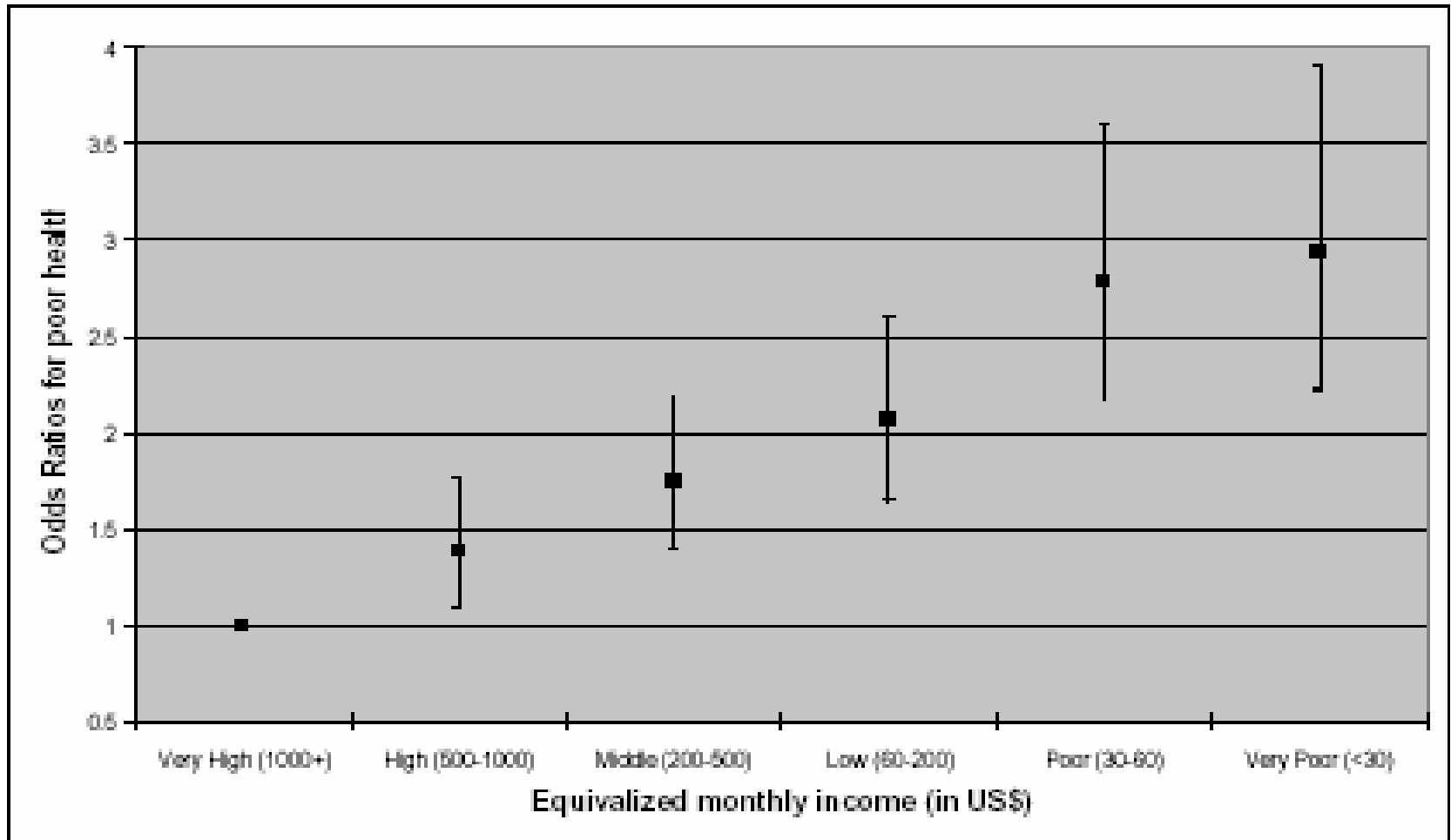
- **Exposures:**

Individual level: age, sex, ethnicity, marital status, income, education, type of health insurance, urban/rural residence

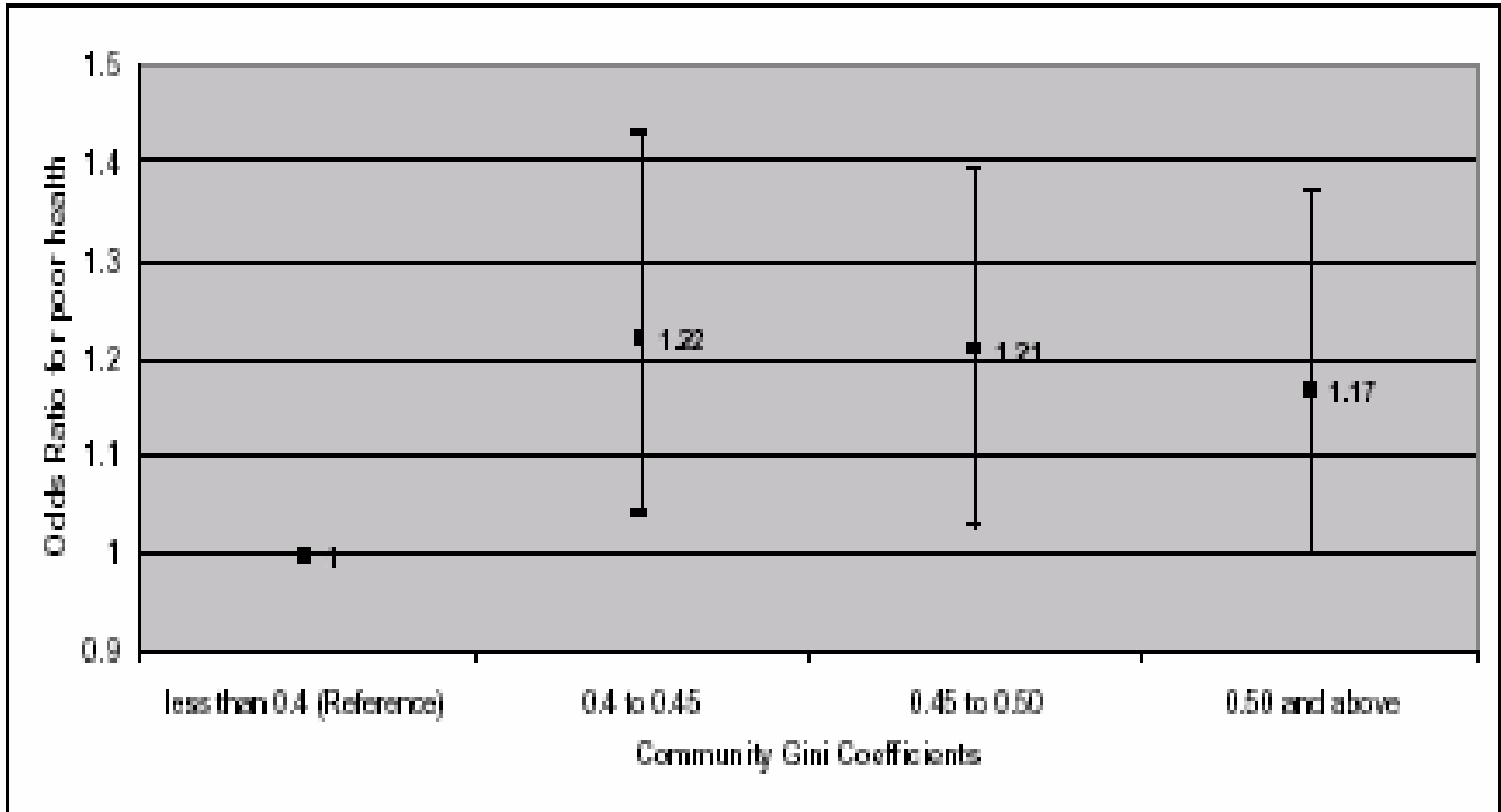
Community level: Income inequality (Gini) and median income

- **Outcome:** Self-reported poor health

Household Income and Odds Ratios of Poor Self-Rated Health, CASEN



Community Gini and Odds Ratios of Poor Self-Rated Health, CASEN



Question 4.

What's the mechanism thru which income inequality affects health?

Current guesses –

1. Social mechanism
2. Political mechanism

Social comparisons & Relative income

A. Your current annual income is \$50,000;
others earn \$25,000

B. Your current annual income is \$100,000;
others earn \$250,000

Which do you choose (assuming equal purchasing power in A and B)?

Social comparisons & Relative income

A. Your current annual income is \$50,000;
others earn \$25,000 – **56 percent**

B. Your current annual income is \$100,000;
others earn \$250,000 - **44 percent**

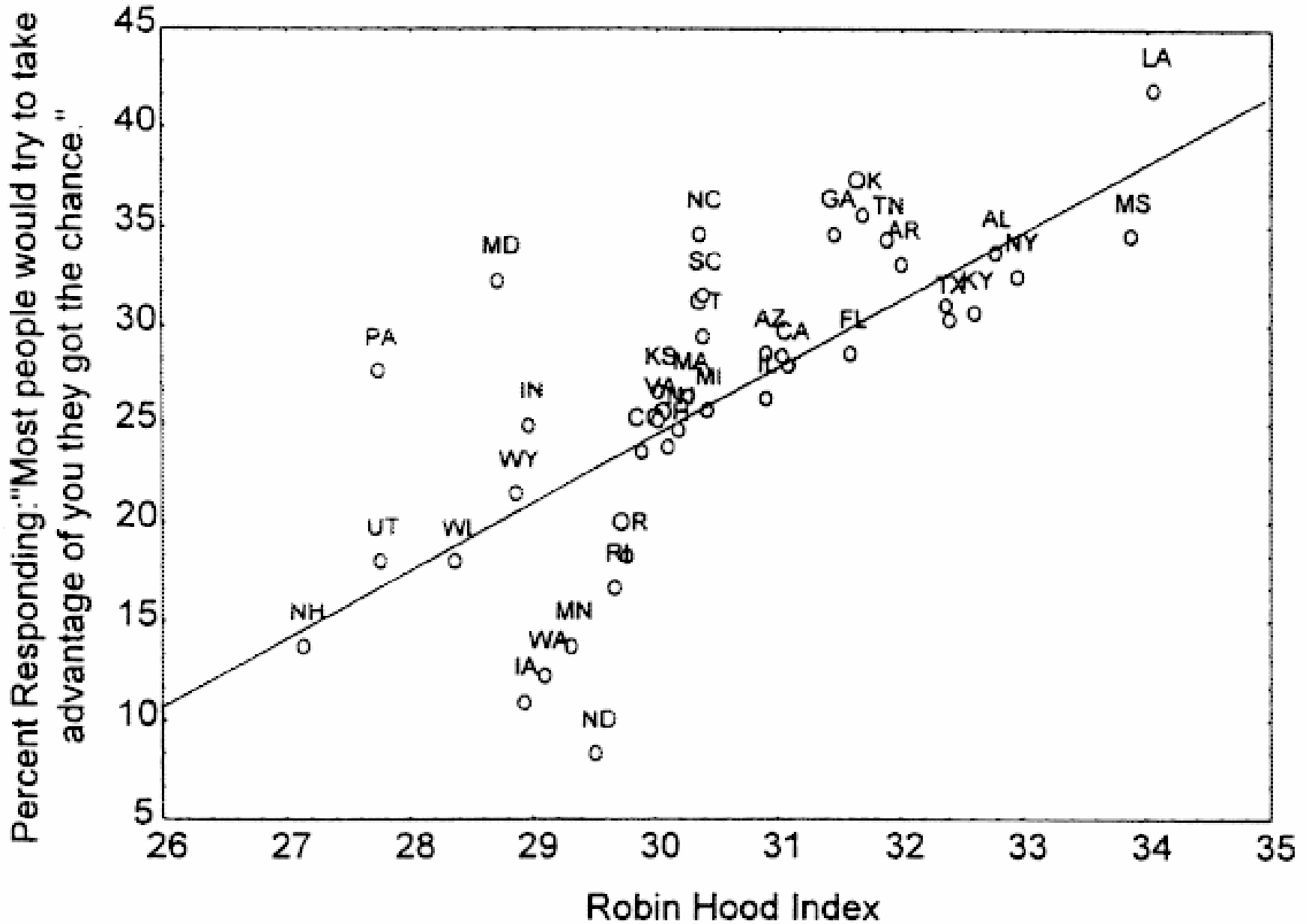
Cultural Consonance

Items rated as “Important for Successful Life”*

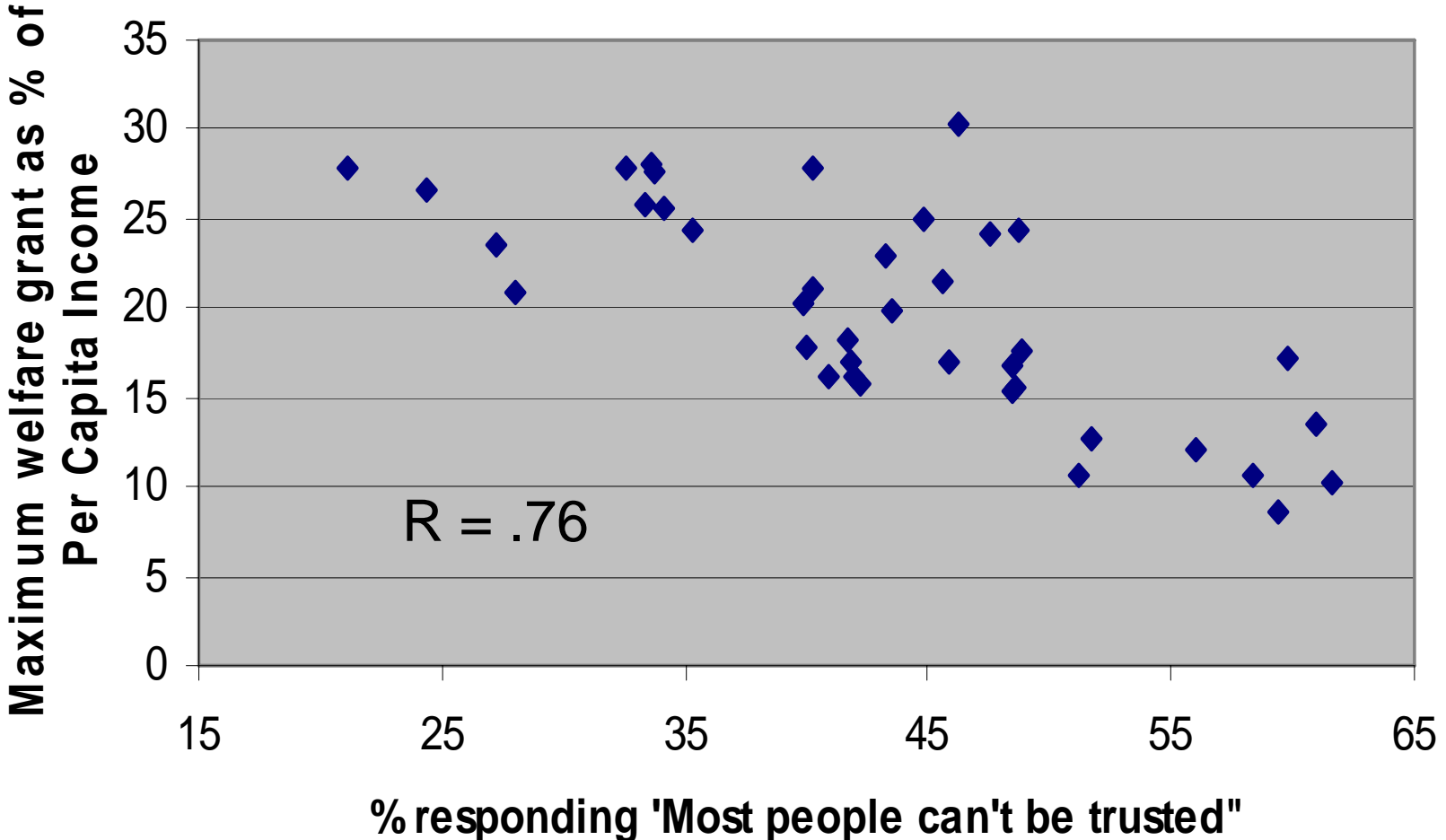
Sao Paulo, Brazil	Southern USA
Shower	Home ownership
Refrigerator	Central heat/air conditioning
Gas/electric stove	Television
Dining table	Automobile
Telephone	Microwave
Automobile	Washer/dryer

*Degree of divergence from cultural consonance associated with higher blood pressure (Dressler, 1996; 1998; 1999).

Mistrust is higher in more unequal states



Social Trust and Generosity of Welfare Payments Across US States



Question 5

What do mechanisms imply for public policy?

- **Social comparison** – If relative rank is what matters, income redistribution may do little.
? Consumption tax
- **Political economy** – Income redistribution, plus campaign finance reform?

Caveats

- Full health dividend from redistribution unlikely to be realized because of “leaky bucket” and effects on incentives.
- State-level inequality is not a good way to test effects of social comparisons – in fact, we know little about direction of social comparisons that matter for health.
- Income inequality might be good for social spending & health!
- It's neo-liberalism, stupid (David Coburn).