Responsibility and causality

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Introduction

- apologies for the (misleading) title of this talk: this is not about moral responsibility and determinism
- the issue of responsibility has invaded social choice in recent decades
- <u>social choice:</u> definition of (il)legitimate inequalities and criteria for redistribution

- distinction between "moral" and "social" responsibility:
  - in some cases individuals will have to live with the consequences of their acts, even if they are not to be "blamed"
  - some acts can be morally wrong and at the same time individuals should not bear a social or economic loss for them

Application: lifestyle and health

- socioeconomic differences in health are well documented

- what is the importance of lifestyle differences?

- explanation with a model of the individual decision-making process:
  - maximization of "utility" under constraints
  - this does not exclude the importance of structural, social and contextual factors

Overview

- **PREFERENCES**

- value of life and time preference – how important are future consequences in decisions of today?

- beliefs and information

- individual behaviour-specific preferences (genetical endowment?)

- **CONSTRAINTS:**

- economic constraints
  – income and prices

- social context ("constraints")
  – environment
  – public services (access to health care system)
  – social neighbourhood
  – specific situational influences

Group differences

- Social interactions: why do members of the same group tend to behave similarly (Manski)?
  - <u>correlated effects</u> – agents in the same group tend to behave similarly because they have similar individual characteristics (e.g. educational level)
  - <u>contextual interactions</u> – propensity to eat fat varies with exogenous characteristics of the group members (e.g. quality of the social network, availability of restaurants)
  - endogenous interactions – propensity to eat fat depends on average smoking behaviour of other members of the group
    - preference interactions
    - information (expectations) interactions generated by observational learning

Responsibility and causality

- Causality is obviously essential if we are interested in evaluating different policy instruments

- Is causality also essential to define if inequalities are illegitimate?
  - individual characteristics
  - social context
  - social interactions

- NOTE: I will not talk about luck and insurance

Overview

1. Responsibility in social choice

2. Circumstances and effort: responsibility as control

3. Responsibility for preferences

4. Some empirical results and a warning

Conclusion

1. Responsibility in social choice

- *John RAWLS, A theory of justice (1971):*
  - autonomous moral agents must get the freedom and assume responsibility of pursuing their own personal conception of the good life
  - resulting differences in well-being are their own responsibility

- *Ronald DWORKIN, What is equality? (1971)*
  - personal talents and handicaps to be seen as internal resources
 - a good distribution of resources must be endowment-insensitive but ambition-sensitive

From resource to opportunity egalitarianism?

- *Richard ARNESON (1989), Gerald COHEN (1989), John ROEMER (?) (1993)*
  - individuals should only be held responsible for characteristics and decisions that are within their own control (e.g. not for preferences that are "imposed" upon them by their education)

- The formal theory is "general", in that it holds for all possible responsibility cuts
  - causal mechanism determining well-being (however measured)
  - two sets of variables: "compensation" (circumstances) and "responsibility" (effort)

# a) Equality of opportunity *(John Roemer, 1994, 1998)*

- Make a distinction between characteristics for which persons are responsible and for which they are not

- Persons who are identical wrt the "compensation characteristics" (circumstances) are of the same **"type"** (e.g. SES)

- Persons who are identical wrt the "responsibility characterics" have exerted the same **"effort"** level (e.g. smoking)

Compensation for equal effort
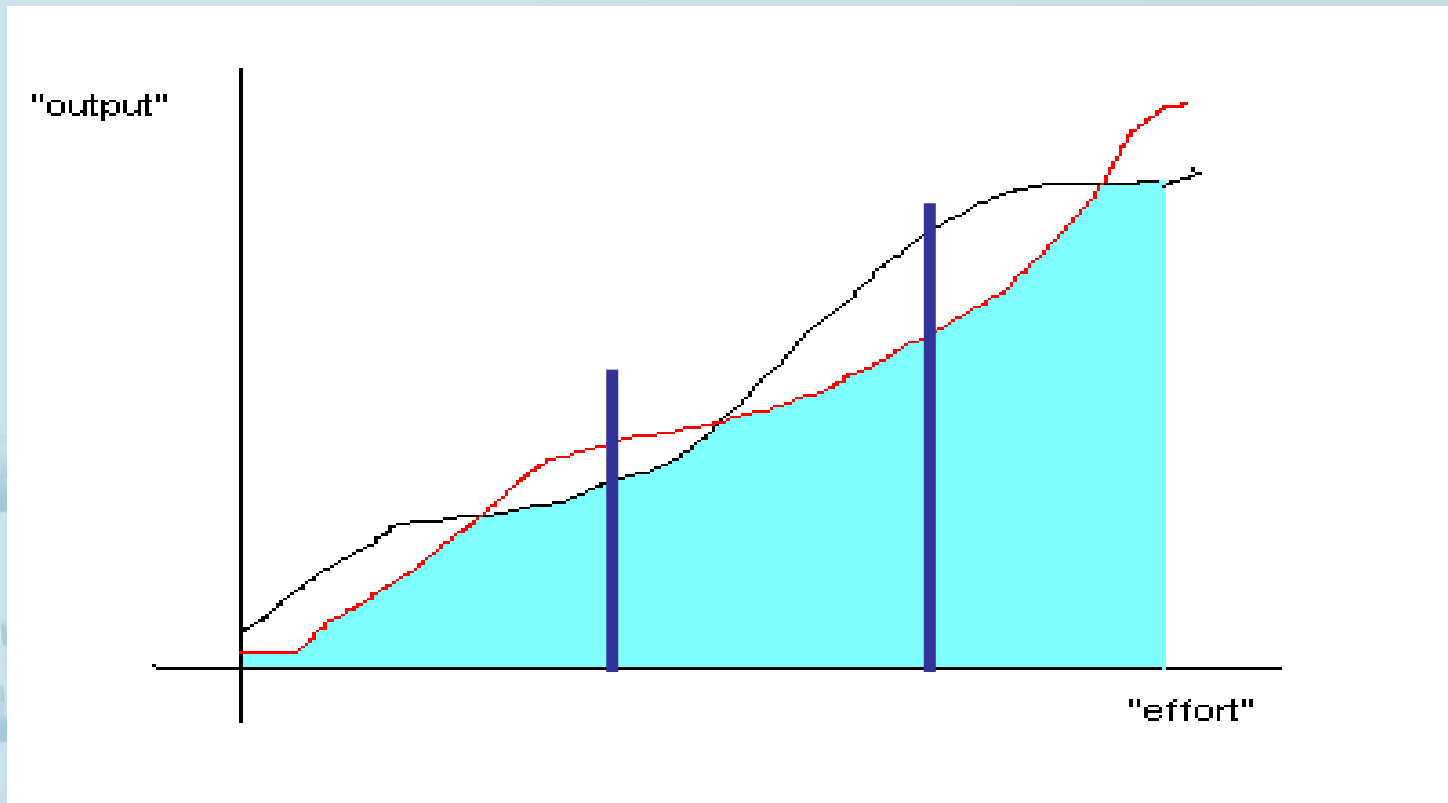
Roemer-rule

$$Max_\varphi \int Min_i O^i(e, \varphi)de$$
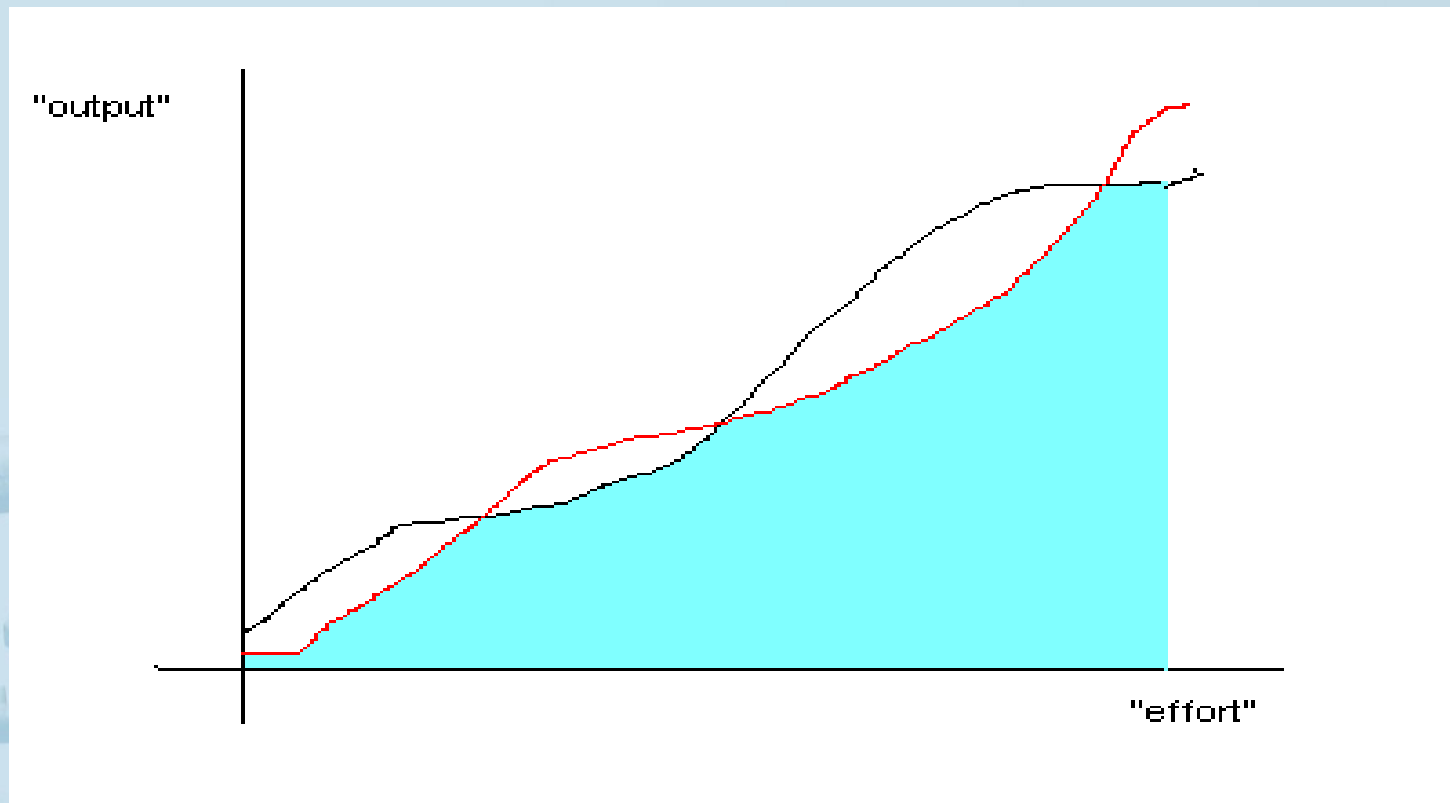
b) Fair allocations *(Marc Fleurbaey, 2008)*

- start from the function describing the causal mechanism linking outcomes (well-being, health) to individual characteristics and resources

- FULL COMPENSATION: two persons with the same values for the effort variables, should have the same outcome (well-being, health)

- STRICT COMPENSATION: two persons with the same values for the compensation variables (the circumstances) should be treated identically

- in general, these two axioms are <u>incompatible</u> and intermediate solutions have then been proposed

Two solutions

- CONDITIONAL EQUALITY (Fleurbaey, 2008, p. 61): Define a <u>reference value of responsibility characteristics</u> and give priority (according to leximin) to individuals who, with their current resources and circumstances and this reference value of responsibility characteristics, would be the worst off.

- EGALITARIAN EQUIVALENCE (Fleurbaey, 2008, p. 63): Define a <u>reference type of circumstances</u> and give priority (leximin) to individuals whose current level of well-being would be obtained with the least resources if their circumstances were of the reference type (and their responsibility characteristics unchanged).

A comparison
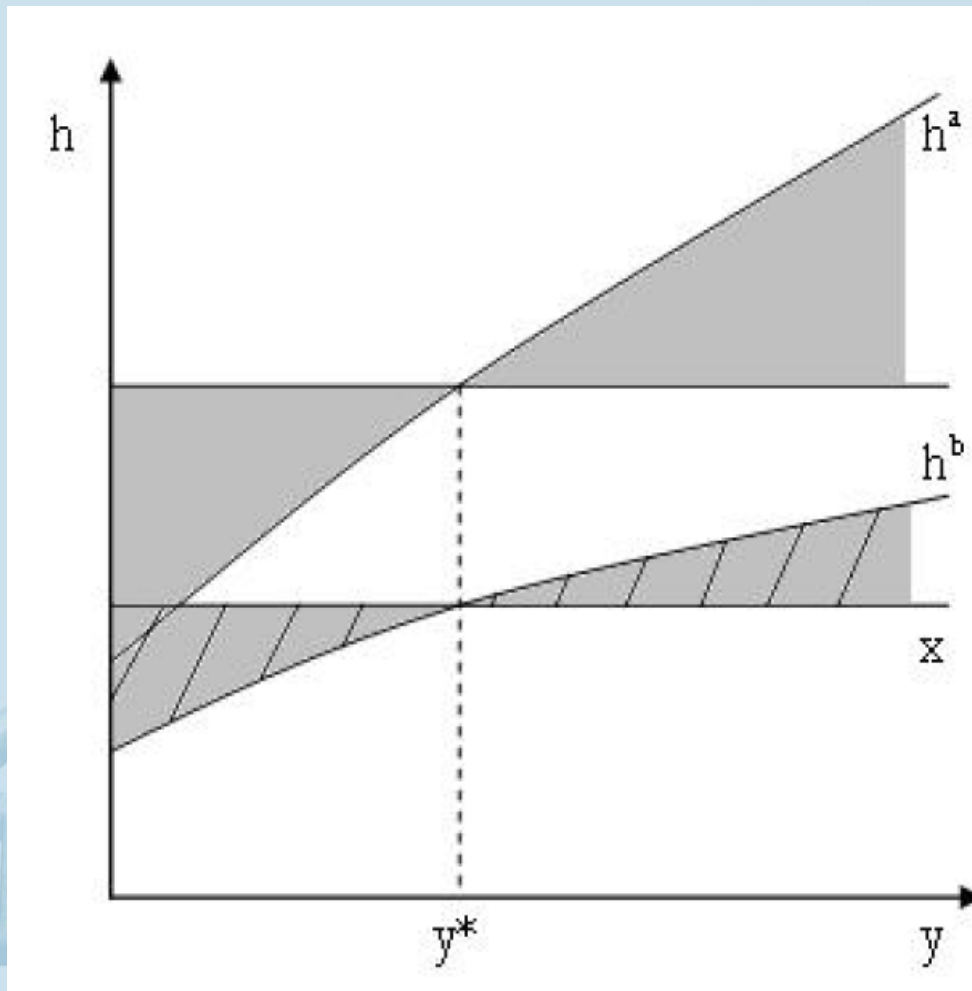
DIRECT UNFAIR-NESS (conditional equality): striped area – does not satisfy compensation

FAIRNESS GAP (egalitarian equi-valence): grey area – reflects also differences in responsibility variables (slopes)

Overview

1. Responsibility in social choice

2. Circumstances and effort: responsibility as control
   Problem 1: determinism and free will
   Problem 2: the economic model
   A pragmatic approach

3. Responsibility for preferences

4. Some empirical results and a warning

Conclusion

2. Circumstances and effort: responsibility as control

- Individuals can only be held responsible for their choices if they are put in <u>equal conditions of choice (compensation idea)</u>

- "genuine control" requires that one also corrects for interindividual differences in choice-making abilities and in the environment

Table 6. Percent with Little or No Knowledge of Part D	
All	39.5%
High SES	32.5%
Bad Health	49.8%
Low Cognition	46.9%
Low SES, Bad Health, and Low Cognition	54.3%

Table 7. Percent Not Likely to Enroll	
All	17.0%
Good Health	19.0%
Bad Health	11.7%
Well-Informed	14.7%
Poorly-Informed	19.6%

Example b: recreational amenities (Sandy et al., NBER 2009)

- clinical records (11 years) of successive visits by children to pediatric clinics in Indianapolis (axe-sex adjusted BMI z-scores)

|	0.1 mile	0.25 mile	0.5 mile	1 mile
Fast food	ns	ns	ns	ns
Fitness areas (children < 8)	- 62.44	- 4.81	ns	ns
Kickball diamond (ch < 8)	- 0.42	ns	ns	ns
Playground without equipment (ch > 8)	2.64	0.46	0.30	ns
Volleyball (ch > 8)	- 0.90	ns	ns	ns

Problem 1: determinism and free will

- Is there any room left for "control" in a deterministic world, if we better and better can understand and explain behaviour?

- philosophical debate
  - compatibilism: free will can exist in a deterministic world (choices that are responsive to reasons or in line with authentic preferences) (Frankfurt, Fischer)
  - incompatibilism:
    - "libertarians": non causally determined free will does exist
    - hard determinists: free will and (therefore) control are simply not meaningful

- more pragmatic stance: in general, in a world where the belief in determinism seems great, "it is difficult to expand equality of opportunity in ways that satisfactorily address the constraining effects of social circumstance, gender socialisation, cultural convictions and so on, without undermining the idea of people as responsible agents" (Phillips, J. Pol. Philosophy, 2006 – quoted in Fleurbaey, 2008)

Example a: social interaction

- Discussion on peer group effects: endogenous or contextual interactions?

- EXAMPLE: Christakis and Fowler (NEJM 2007)
  - follow an interconnected social network of 12.067 people assessed repeatedly from 1971 to 2003
  - chances of becoming obese increase by 57% if there is an obese friend, by 40% if there is an (adult) obese sibling, by 37% if there is an obese spouse [with due correction for selection effects?]
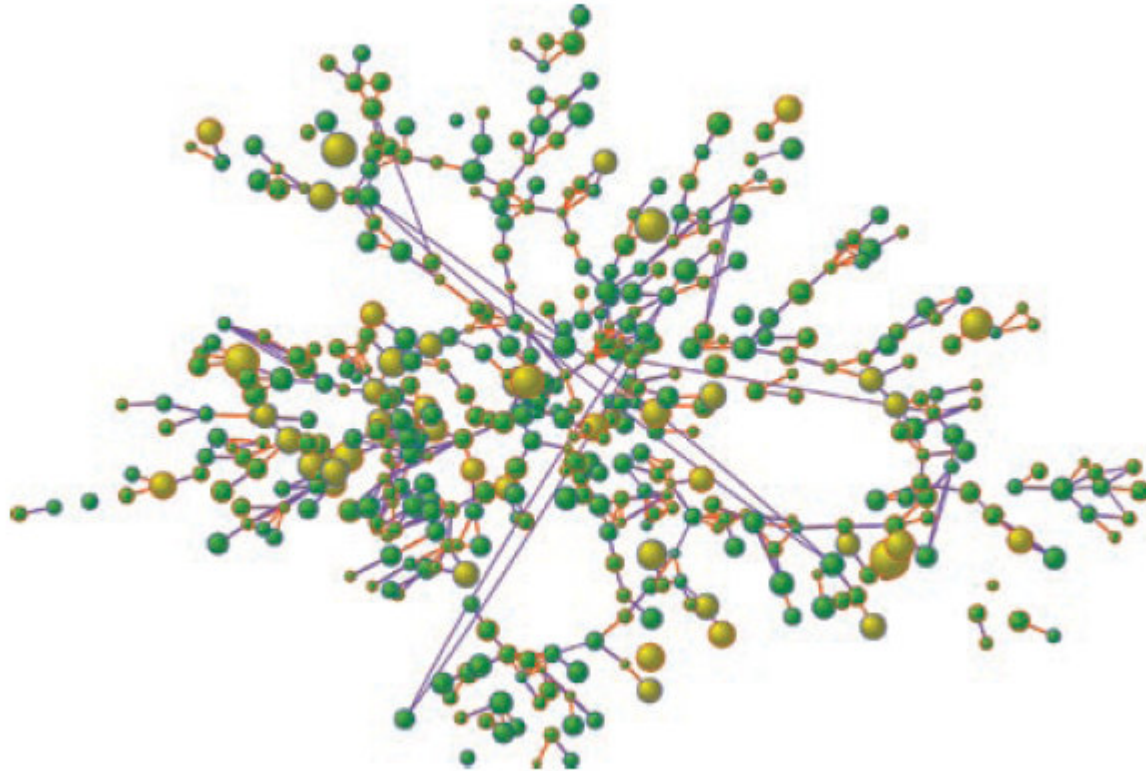 - persons of the same sex had relatively greater influence on each other than those of opposite sex
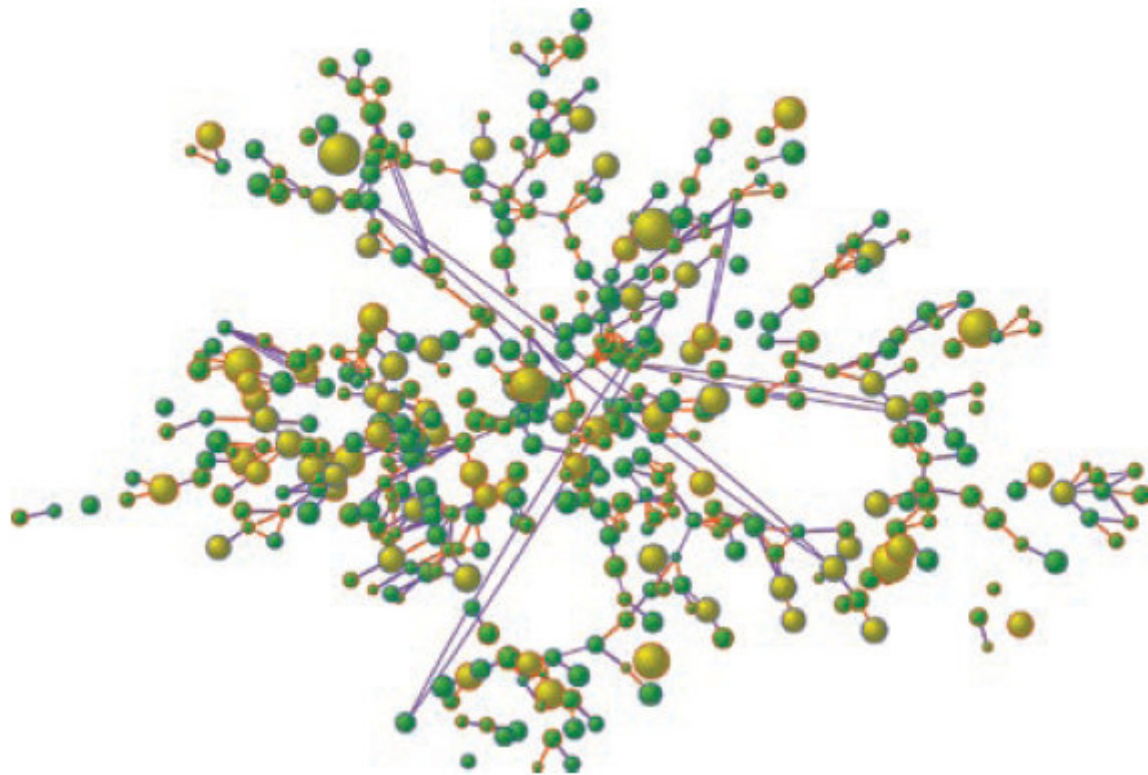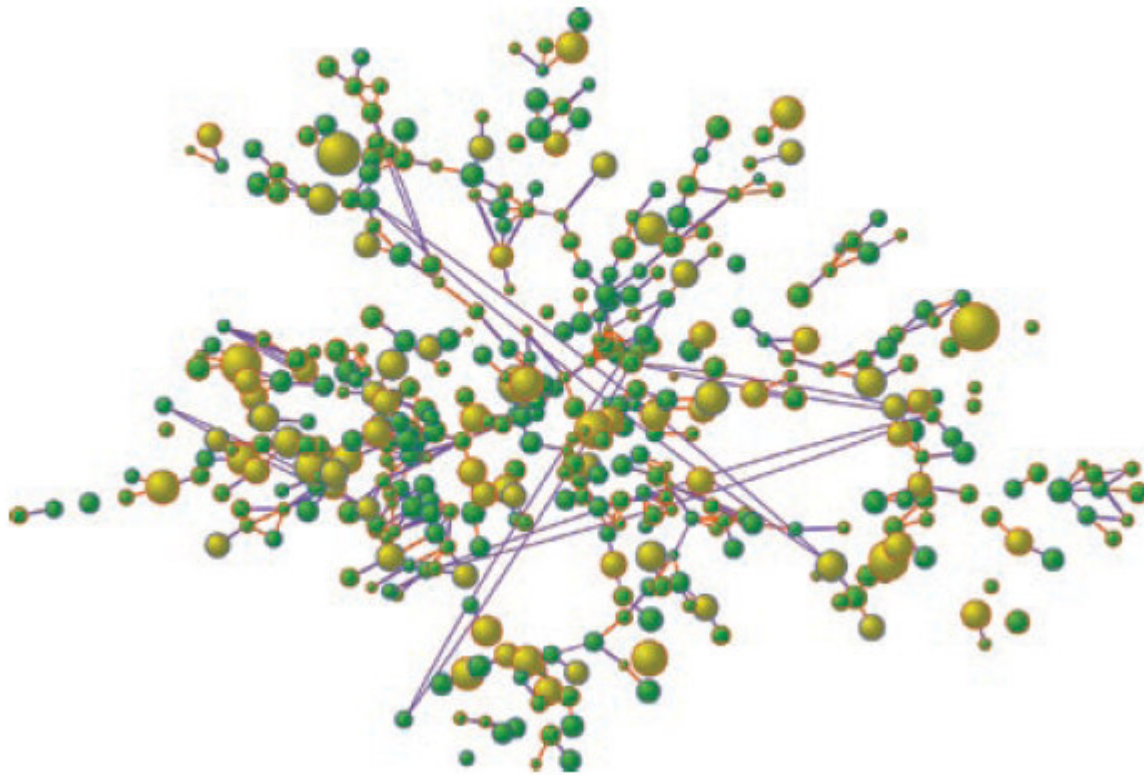
A 1975
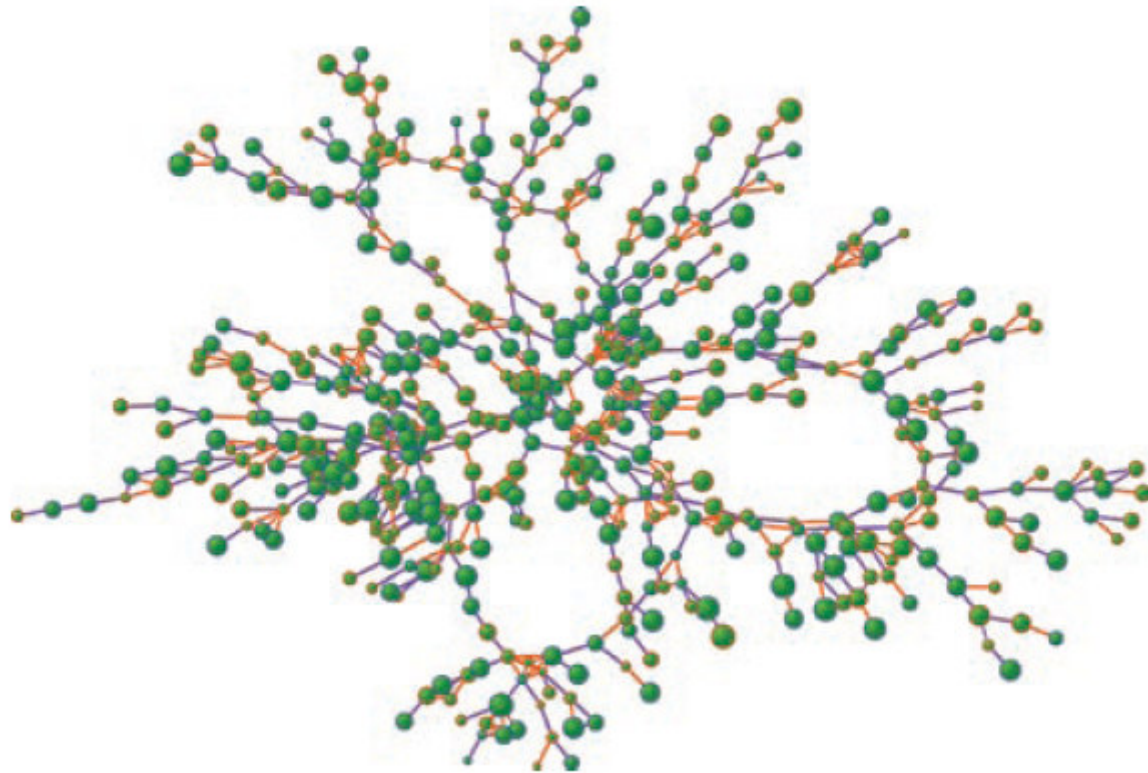
B 1980
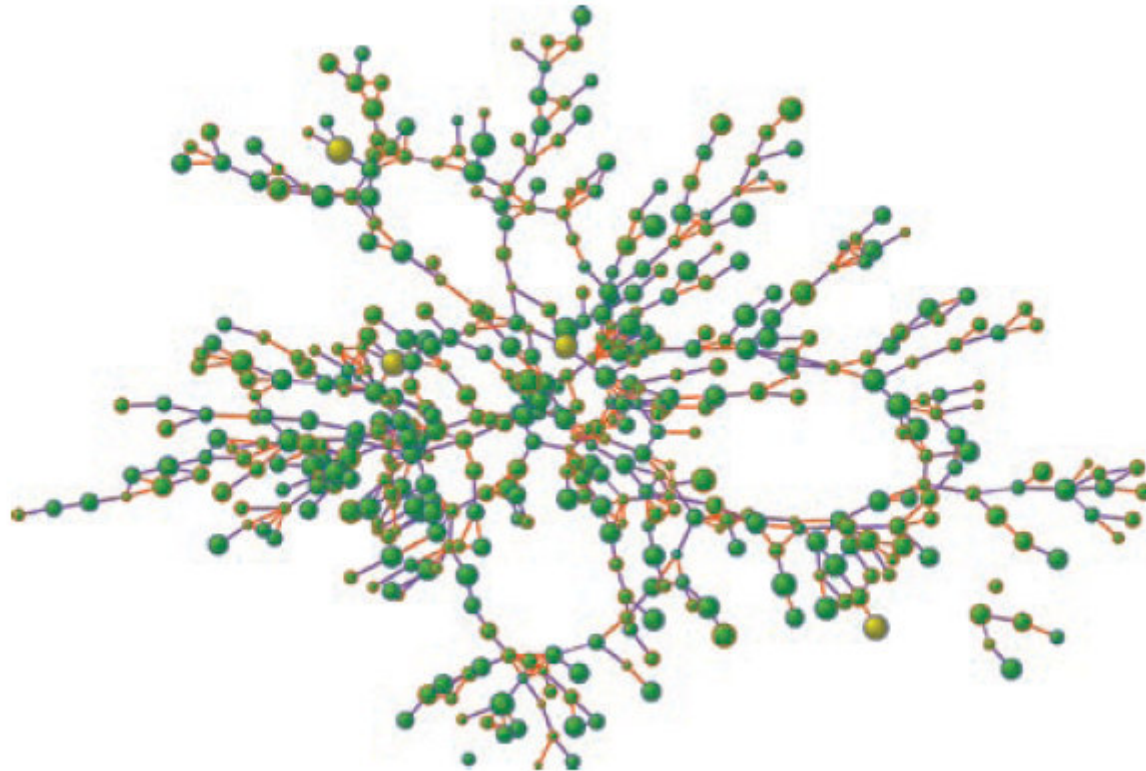
D 1990

E 1995

F 2000

Example b: information

- - calorie posting in NYC Starbucks (Bollinger et al., NBER 2010)

COFFEE & ESPRESSO

HOT OR ICED

	TALL 12 FL OZ		GRANDE 16 FL OZ		VENTI 20 FL OZ HOT / 24 FL OZ ICED	
PIKE PLACE ROAST™	1.55	5 cal	1.75	5 cal	1.85	5 cal
TODAY'S MORNING PICK	1.55	5 cal	1.75	5 cal	1.85	5 cal
ICED BREWED COFFEE	1.90	60 cal	2.20	90 cal	2.55	130 cal
CAFFÈ LATTE	2.65	150 cal	3.20	190 cal	3.50	240 cal
CAFFÈ AMERICANO	1.85	10 cal	2.15	15 cal	2.50	25 cal
CAPPUCCINO	2.65	90 cal	3.20	120 cal	3.50	150 cal
VANILLA LATTE	2.95	190 cal	3.50	250 cal	3.80	320 cal
CAFFÈ MOCHA	2.95	270 cal	3.50	330 cal	3.80	410 cal
CARAMEL MACCHIATO	3.10	180 cal	3.65	240 cal	3.95	300 cal
WHITE CHOCOLATE MOCHA	3.35	370 cal	3.85	470 cal	4.20	580 cal
SKINNY VANILLA LATTE	2.95	90 cal	3.50	130 cal	3.80	160 cal
VANILLA LATTE +PROTEIN	3.45	200 cal	4.00	280 cal	4.30	350 cal
PUMPKIN SPICE LATTE	3.35	300 cal	3.85	380 cal	4.20	470 cal

FLAVORED SYRUP Regular 20 cal per pump or Sugar-Free 0 cal (Add 30¢)
SOYMILK (Add 40¢)
EXTRA ESPRESSO SHOT 5 cal (Add 55¢)
ADD NOURISHMENT +PROTEIN 30 cal (Add 50¢) +ENERGY 5 cal (Add 50¢)

Food

	Transaction data	Cardholder data
log(beverage calories)	-0.003	0.008
	(0.001)	(0.005)
log(food calories)	-0.147	-0.119
	(0.002)	(0.008)
log(beverages + food)	-0.060	-0.051
	(0.001)	(0.005)
Number of observations	118,480	1,511,516

- overall effect small: 6%

- no effect for beverages (Starbucks core business): probably due to expectations

- no impact on Starbucks average profit – even positive effect for stores located close to Dunkin Donuts

- mixture of "salience" and learning (information about commuters)

Questions

- Are individuals responsible for (a) clustering in social and regional groups; (b) being exposed to info in Starbuck.

- Probably, we would think that going to Starbucks is part of responsibility – but then differentiated exposure to information, which is probably not part of responsibility.

Problem 2: the economic model

- in models of "rational choice", individual decisions are analysed as resulting from a mechanical optimization exercise with a given objective (preferences) and a given set of options (determined by budget set and possibly additional constraints)

- in this model, genuine choice is an elusive notion

33

In general...

- "The best candidates for non-causally determined characteristics are fixed characteristics in a causal model. Indeed, all endogenous variables are causally influenced by other variables of the model and therefore cannot embody free will. Intuitively, when a decision variable reacts to external stimuli it is problematic for the control approach to hold the agent fully responsible for it. It makes more sense to hold him responsible for the underlying disposition that governs the agent's reactions to stimuli. This disposition is a fixed characteristic in the eyes of causal analysis." (Fleurbaey, 2008, p. 87)

Roemer: a pragmatic approach

- suggested in my presentation until now: necessary to carefully estimate a model in order to distinguish different influences on behaviour and so to determine what is "genuine" control

- in practice, effort is often unobservable and treated as a residual

- Roemer: individuals cannot be held responsible for characteristics that are correlated with circumstances

- proposal: effort defined in terms of the conditional distribution of output

"Effort" dependent on SES
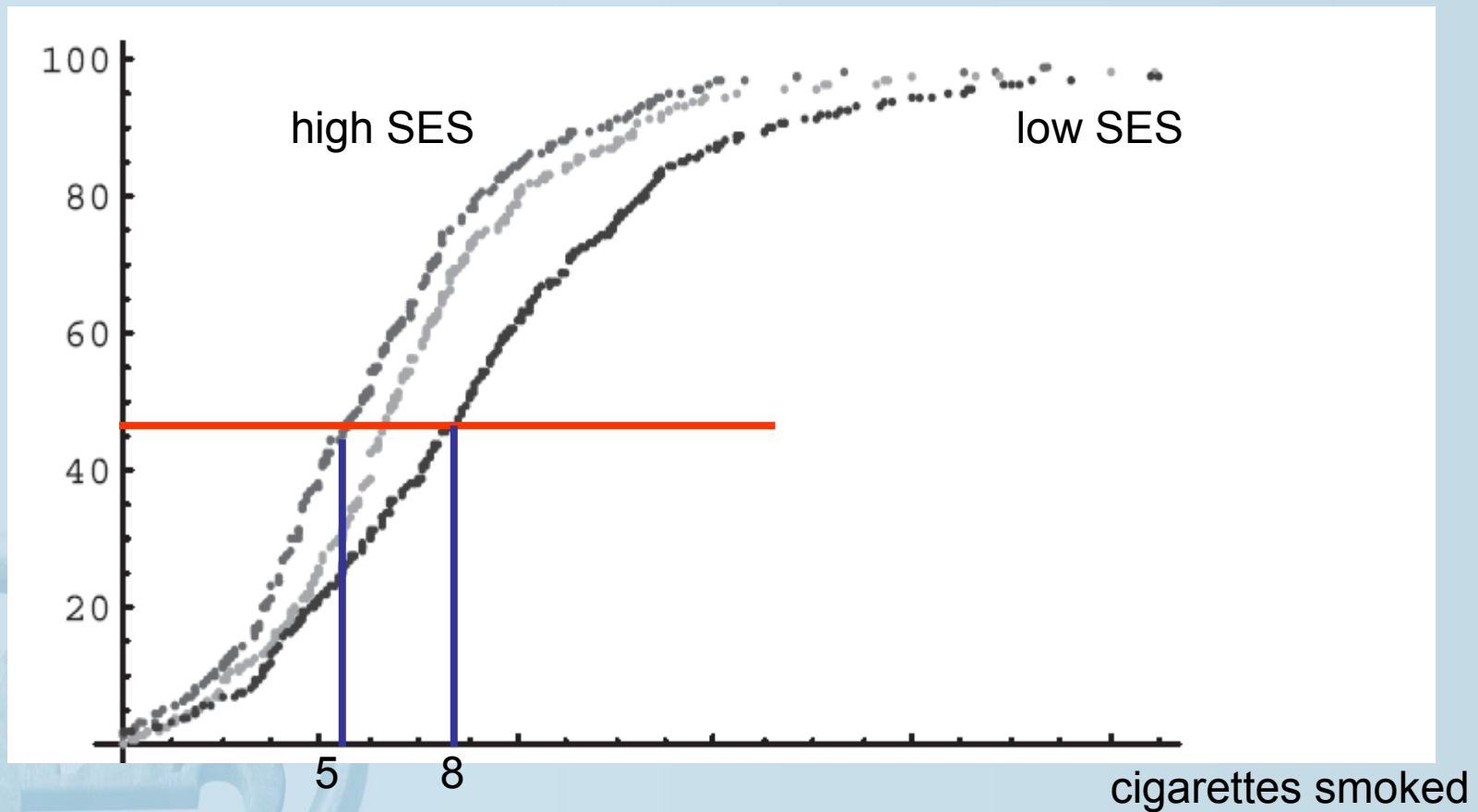
high SES   low SES

5   8

cigarettes smoked

Roemer: a pragmatic approach

- suggested in my presentation until now: necessary to carefully estimate a model in order to distinguish different influences on behaviour and so to determine what is "genuine" control

- in practice, <u>effort</u> is often unobservable and treated as a <u>residual</u>

- Roemer: individuals cannot be held responsible for characteristics that are <u>correlated</u> with circumstances

- proposal: effort defined in terms of the conditional distribution of output

- empirical applications in the same spirit (Trannoy et al., 2010): treat residual in regression as indicator of effort

Criticism

a) this is very much a black box approach, yielding at best a lower bound (number of types may be very large)

b) in some cases correlation is unproblematic

- Starbucks example: depending on their responsibility characteristics, individuals may be exposed to different external influences for which they cannot be held responsible

c) use of a shortcut can definitely <u>not</u> be seen as a convincing answer to the basic (philosophical) criticism described earlier

- e.g. in the applied work the variations of output within a given type simply reflect differences in the preferences of the individuals

Overview

1. Responsibility in social choice

2. Circumstances and effort: responsibility as control

3. Responsibility for preferences

   Approach 1: identification

   Approach 2: autonomy

   Causality and recovering "authentic" preferences

4. Some empirical results and a warning

Conclusion

3. Responsibility for preferences

- back to Rawls and Dworkin: individuals are held responsible for their preferences (their conceptions of a good life), even if these preferences are not chosen/are not under their control

- RESPECT FOR PREFERENCES DOES NOT COINCIDE (AND EVEN CONFLICTS) WITH RESPECT FOR SUBJECTIVE WELFARE
  - two persons
    - situation I : average inhabitant of Iceland, university degree, life expectancy 81.5 years, income of $36,510
    - situation S : average inhabitant of Sierra Leone, no schooling, life expectancy 41.8 years, income of $806
  - both persons prefer I to S
  - possible that person in S is happier than person in I (due to differences in aspiration levels)

Approach 1: identification (Dworkin, Scanlon)

- Dworkin: respect for individuals implies respect for their preferences with which they identify (when people endorse their preferences, it is bizarre to consider these as a piece of bad luck)

- Scanlon: compensation for religious "burdens" incompatible with "regarding them as matters of belief and conviction which one values and adheres to because one thinks them right"

- note: closely related to the "compatibilist" approach to free will (control defined in terms of choices reflecting responsiveness to reasons)

- a bit counterintuitive?

- this approach can be very harsh toward some badly-off individuals. Is it not possible to endorse one's preferences and at the same time to regret the disadvantages that stick to it? (Fleurbaey, 2008)

Approach 2: autonomy (Fleurbaey, 2008)

- responsibility is not something which justifies disadvantages, but something which is assumed by individuals when they accept liabilities: justified by independent fairness principles

- autonomous individuals must have the freedom to practice the activity of choice as much as desired and possible
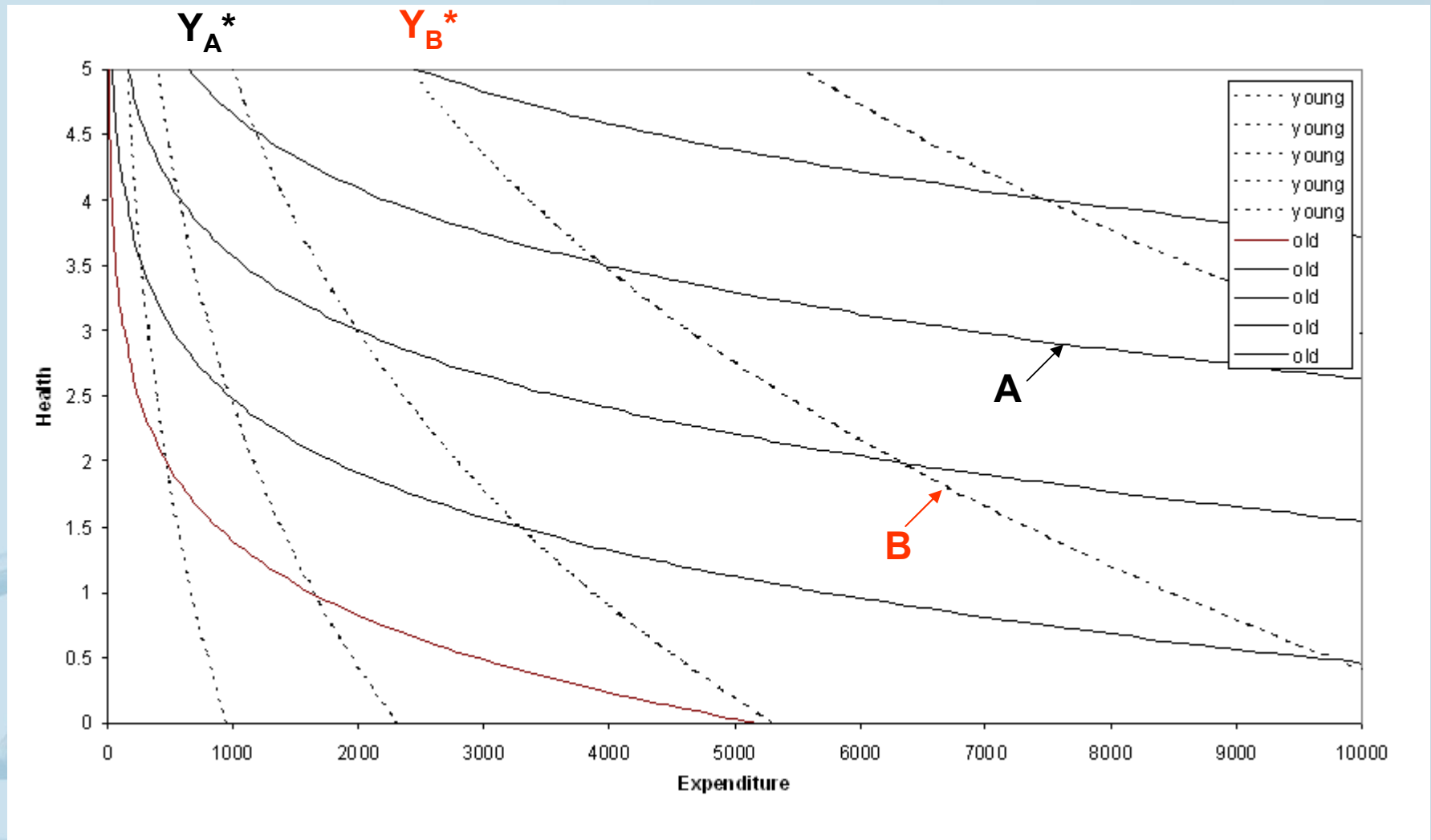
What then about causality?

- a structural model is needed to <u>identify preferences</u>

- usual economic approach: try to derive information about preferences from observed choice behaviour
  - examples: recreational amenities, Starbucks

- at first sight, causal question about preferences ("Where do preferences come from?") becomes fully irrelevant in this setting.

Recovering "authentic" preferences

- However, only "authentic" preferences should be respected. What do we consider as genuine preferences? What about conditioning and alienation?

- To answer these questions, a better insight into the process of preference formation needed.

# Example a: fast food advertising (Chou, Grossman et al., JLaw Econ 2008)

Dependent Variable: Overweight[a]

|	Ages 3-11 (NLSY79)					
	Specification 1			Specification 2		
	Whole	Male	Female	Whole	Male	Female
Messages seen	0.010	0.035	-0.018	0.026***	0.032**	0.021**
	(0.454)	(1.026)	(0.681)	(2.533)	(1.856)	(2.002)
TV time (10 hours)	0.004	-0.001	0.010*			
	(0.811)	(0.139)	(1.346)			
Other variables						
Individual variables[b]	Yes	Yes	Yes	Yes	Yes	Yes
DMA fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
State variables[c]	Yes	Yes	Yes	Yes	Yes	Yes
Sample	6322	3228	3094	6322	3228	3094
R-squared	0.088	0.101	0.101	0.088	0.101	0.101
	Ages 12-18 (NLSY97)					
	Specification 1			Specification 2		
	Whole	Male	Female	Whole	Male	Female
Messages seen	0.005	-0.007	0.015	0.040***	0.064***	0.011
	(0.201)	(0.220)	(0.511)	(2.724)	(2.985)	(0.746)
TV time (10 hours)	0.010	0.021**	-0.001			
	(1.216)	(2.005)	(0.112)			
Other variables						
Individual variables[b]	Yes	Yes	Yes	Yes	Yes	Yes
DMA fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
State variables[c]	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	6,818	3,527	3,291	6,818	3,527	3,291
R-squared	0.096	0.103	0.125	0.096	0.102	0.125

- (if one believes these estimates) banning fast-food restaurant advertising would reduce the number of overweight children (ages 3-11) by 10% and the number of overweight adolescents (ages 12-18) by 12%.

- elimination of tax deductibility of this type of advertising would produce smaller declines (3 and 5%), but would impose lower "costs" on children and adults who consume fast food in moderation (information remains available).

Example b: psychological features

- <u>IMPATIENCE, PROCRASTINATION, SIGN EFFECT</u>
  (Ikeda et al., JHE 2010)

- survey with 2789 Japanese (adult) respondents
- results for impatience:
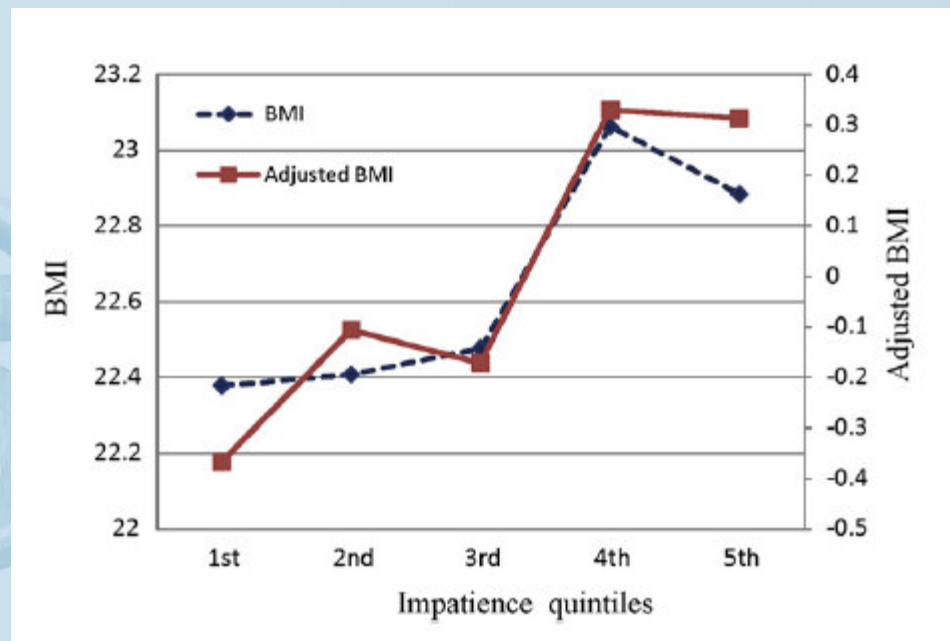
- results for procrastination and the sign effect (negative payoff discounted less than positive payoffs):
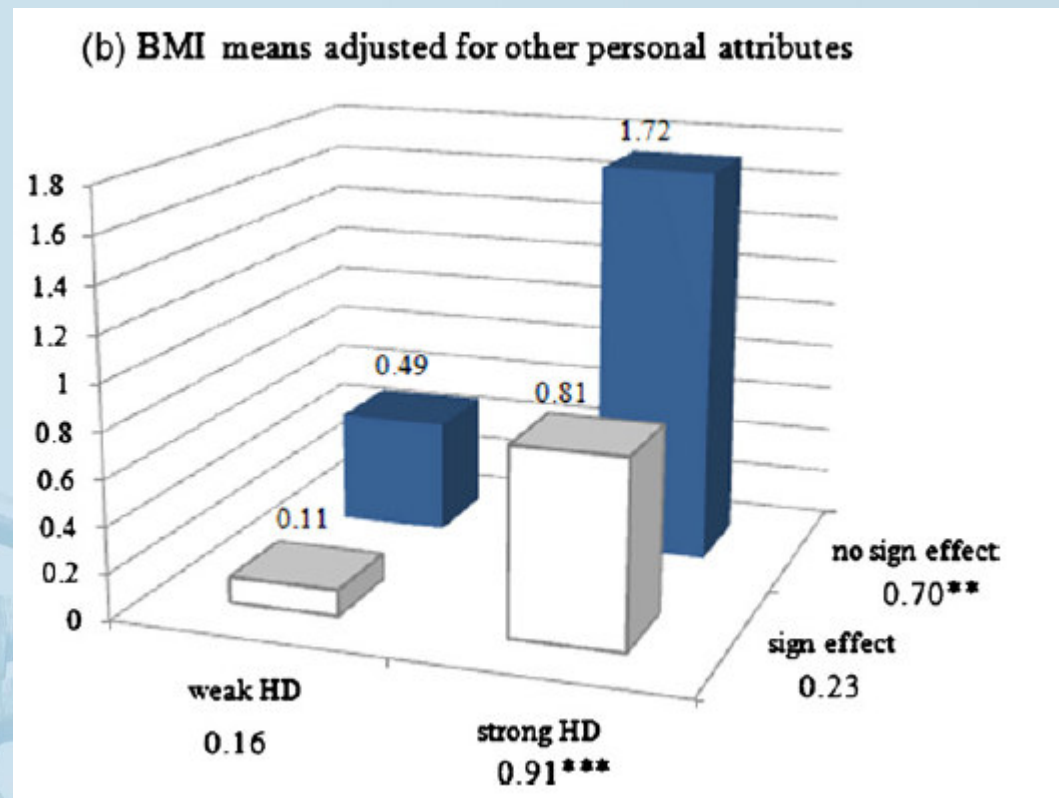
(b) BMI means adjusted for other personal attributes

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Conclusion

4. Some empirical results and a warning

- At some occasions, Roemer takes a relativistic stance in the debate:

    "Because the choice by society of these parameters (i.e. dimension and fineness of the type grid) cannot but be influenced by the physiological, psychological, and social theories of man that it has, the present proposal would implement different degrees of opportunity egalitarianism in different societies". *(Roemer,1993)*

a) Where to draw the responsibility cut?

- An empirical study: Schokkaert and Devooght (2003)

Health case 1

1) Luke and Mark are both suffering similar effects of lung cancer. They have the same financial wealth at their disposal and earn the same income. Luke and Mark have to be admitted to a hospital for treatment. We suppose that all treatments are effective. Luke chooses for a **common room** which he shares with other patients. The costs of his treatment in the hospital are 250. Mark, on the other hand, opts for a private room in the hospital which gives him more comfort. Due to his choice of a **private room**, the costs of the treatment of Mark are 750. The government has to divide 500 as a financial contribution to the costs of the treatments of the two persons and is willing to divide it completely. What would you consider to be a just division of this amount of money? Place an asterisk * in the box of your choice. In row H you can add an own ideal distribution of the government money.

Variants

	Preferences	Resources
Health		
Controlled	Mark opts for a private room because it is more comfortable	Mark's treatment is more expensive because he is a confirmed smoker
Involuntary	Mark opts for a private room because he has psychological problems in the presence of other people	Mark's treatment is more expensive because he has a genetic defect and his natural resistance is weaker

Results

	Belgium n=94	Burkina Faso n=87	Indonesia n=200
Health case 1: Private room (CP)			
Full compensation	0.0	1.1	0.0
Intermediate compensation	37.6	26.4	30.9
No compensation	60.2	67.8	63.3
Countercompensation	2.2	4.7	5.8
Health case 2: Private room because of psychological problems (IP)			
Full compensation	6.4	9.3	5.7
Intermediate compensation	73.4	68.6	62.0
No compensation	18.1	19.8	28.1
Countercompensation	2.1	2.3	4.2
Health case 3: Smoker (CR)			
Full compensation	3.2	2.3	6.1
Intermediate compensation	37.2	34.9	38.5
No compensation	45.7	45.3	39.0
Countercompensation	13.9	17.5	16.4
Health case 4: Genetic defects (IR)			
Full compensation	28.7	25.6	28.4
Intermediate compensation	64.9	59.3	52.1
No compensation	5.3	11.6	16.0
Countercompensation	1.1	2.5	3.6

Summary of results

	Preferences	Resources
Controlled	31.8	41.9
Involuntary	73.1	84.8

- What about "intermediate" and "countercompensation"?

b) Responsibility and undesirable behaviour

- example: Ubel et al., Bioethics, 1999
- respondents: 283 prospective jurors in Philadelphia (selected from voter registration records)

- Q: 200 patients waiting for heart transplant (100 with unhealthy lifestyle), 100 organs available: how should the available organs be allocated over the two groups of patients?

Behaviour	% chance of 5 year survival		
	90	70	50
Intravenous drug use	33	33	26
Cigarette smoking	45	43	36
High fat diet	48	47	41

- two versions where it was explicitly stated that the heart disease could NOT be ascribed to the unhealthy lifestyle:

- *did not make any difference*

Justifications given

Table 3 *Justifications provided by subjects who gave less than 50% of the organs to patients with controversial behaviors*

Justification	Percent of these subjects providing this justification*			
	High fat diet (N=73)	Smoking (N=95)	Intravenous drug use (N=160)	Total (N=328)
People who cause their own illness should not receive equal priority for organs	21	31	28	27
Organs should be distributed to those with best prognosis	29	19	18	20
Behavior is socially unacceptable	7	9	21	15
Behavior will recur after transplant	7	6	13	9
Patients with behaviors have additional health problems	3	5	8	6
Allocation should be contingent on cessation of behavior	3	6	4	5
Other	30	24	15	21

Conclusion

- Responsibility-sensitive egalitarianism becomes more and more popular within social choice

- If one does <u>not</u> accept the Roemer-shortcut, insight into the causal determinants of behaviour is essential

  - to determine what is "genuine" control

  - to recover "authentic" preferences

- Causality is of course essential for policy formulation and evaluation