Inequality, income and well-being

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This lecture is based on Decancq, K., Fleurbaey, M., Schokkaert, E., Inequality, income and well-being, forthcoming chapter in *Handbook of Income Distribution (eds. A. Atkinson, F. Bourguignon),* North-Holland.

Introduction

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- Is income sufficient? Resource-based versus well-being based approaches.

Question

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- and that is still *sufficiently operational* to be used in applied welfare analysis?

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2. What are the implications for the demarcation of the domain of individual responsibility?

Roadmap of the chapter

1. Introduction.
2. Historical sketch.
3. Inequality of what?
   - Functionings and capabilities
   - Utility and happiness
   - Equivalent income
4. Multidimensional inequality and dominance
5. Applications
   - Household equivalence scales
   - Publicly provided services and benefits
   - International comparisons

Structure of the presentation

1. Introduction**.**
2. **Historical sketch.**
3. Functionings and capabilities.
4. Utility and happiness.
5. Equivalent income.
6. Respect for preferences and multidimensional inequality measures.
7. International welfare comparisons.

Historical sketch 1

- Utilitarian roots of economics.

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- Informational approach to social choice: introduce interpersonal comparability. Leads to subjective welfarism.

Historical sketch 2

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- Link with multidimensional inequality measurement.

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- Equivalent income is our APPROACH 3.

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- Happiness is our APPROACH 2.

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2. Welfarism: social welfare is defined in terms of *measures of individual well-being* (e.g. index of functionings).
3. Social welfare evaluation takes into account *individual preferences*.

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- Subjective individual satisfaction is given by a "satisfaction function" $S_i(\ell_i)$.
- A method of interpersonal well-being comparisons must be able to rank such triplets (ℓ_i, R_i, S_i).

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- CAPABILITIES: the set of feasible functionings:

$$Q_i = \{\ell_i \mid \ell_i \text{ is feasible for individual } i\}$$

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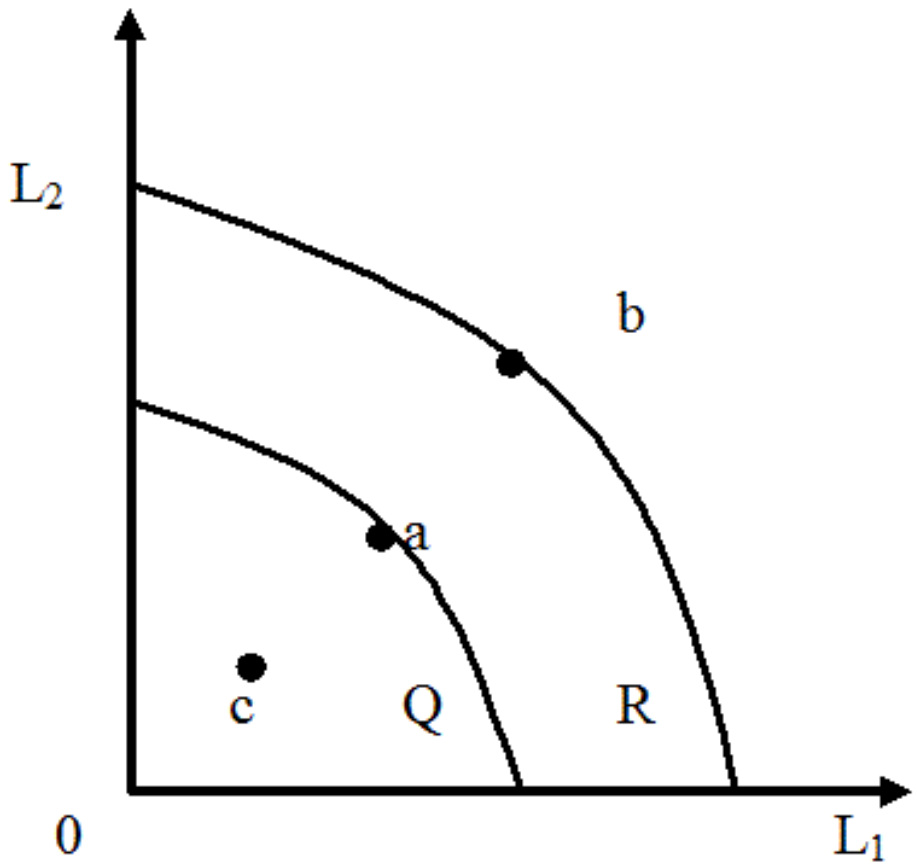
- Difficult to evaluate sets.
- Do $\{a\}$ and $\{b\}$ offer the same degree of freedom?
  - Leads to cardinality-based evaluation.
- How to introduce quality considerations? Through preferences? A large and very abstract literature, until now (and as far as I know) no applications.

Capabilities and responsibility

- The capabilities approach is extremely harsh for those who make mistakes and choose the "wrong" elements from their capability set.



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- Most empirical applications work with (kind of) functionings.
- Where does the list of functionings come from?
- How to aggregate functionings into a measure of individual well-being?

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- Yet: how to choose the cardinalization? What if preferences differ?

The dominance principle

Dominance Principle: (ℓ', R', S') is at least as good as (ℓ'', R'', S'') if $\ell' R \ell''$ for all R, and strictly better if $\ell' P \ell''$ for all R.

If preferences are monotonic, this implies that (ℓ', R', S') be better than (ℓ'', R'', S'') whenever $\ell' \gg \ell''$.

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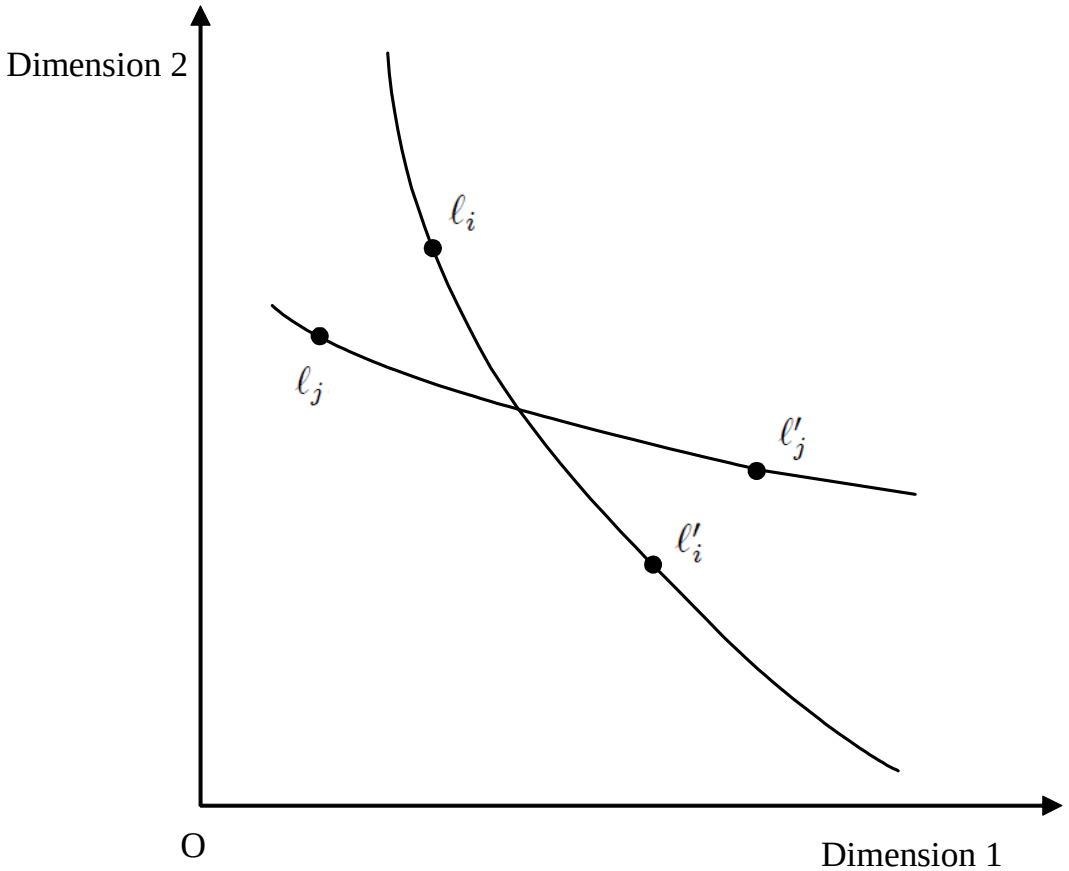
Personal-Preference Principle: (ℓ, R, S) is at least as good as (ℓ', R, S) if $\ell R \ell'$ and strictly better if $\ell P \ell'$.

A conflict

(Brun and Tungodden, Soc. Choice and Welfare, 2004)



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A surprising revival

- Boom in the literature on happiness.
- "All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied".
- "Taken all together, how happy would you say you are? Please use this card."

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- "Taken all together, how happy would you say you are? Please use this card."
- Although the literature is largely positive, there is (almost always) an implicit suggestion that "more happiness" is better (as if this is self-evident).

$$WB^{SA}(\ell_i, R_i, S_i) = S_i(\ell_i)$$

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   - Individuals who have lost a limb may, after adaptation, recover a good subjective well-being score —but still express a strong aversion to disability (Loewenstein and Ubel 2008, Oswald and Powdthavee 2008).

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- Feelings are (1) more adaptive; (2) more strongly genetically determined.
- The fact that the answers to the two questions are highly correlated is not reassuring, but problematic.

Kahneman: experience sampling or day reconstruction

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	Mean affect rating					Mean hours/ day	Proportion of sample reporting
	Positive	Negative	Competent	Impatient	Tired		
Activities							
Intimate relations	5.10	0.36	4.57	0.74	3.09	0.2	0.11
Socializing	4.59	0.57	4.32	1.20	2.33	2.3	0.65
Relaxing	4.42	0.51	4.05	0.84	3.44	2.2	0.77
Pray/worship/meditate	4.35	0.59	4.45	1.04	2.95	0.4	0.23
Eating	4.34	0.59	4.12	0.95	2.55	2.2	0.94
Exercising	4.31	0.50	4.26	1.58	2.42	0.2	0.16
Watching TV	4.19	0.58	3.95	1.02	3.54	2.2	0.75
Shopping	3.95	0.74	4.26	2.08	2.66	0.4	0.30
Preparing food	3.93	0.69	4.20	1.54	3.11	1.1	0.62
On the phone	3.92	0.85	4.35	1.92	2.92	2.5	0.61
Napping	3.87	0.60	3.26	0.91	4.30	0.9	0.43
Taking care of my children	3.86	0.91	4.19	1.95	3.56	1.1	0.36
Computer/e-mail/Internet	3.81	0.80	4.57	1.93	2.62	1.9	0.47
Housework	3.73	0.77	4.23	2.11	3.40	1.1	0.49
Working	3.62	0.97	4.45	2.70	2.42	6.9	1.00
Commuting	3.45	0.89	4.09	2.60	2.75	1.6	0.87
Interaction partners							
Friends	4.36	0.67	4.37	1.61	2.59	2.6	0.65
Relatives	4.17	0.80	4.17	1.70	3.06	1.0	0.38
Spouse/SO	4.11	0.79	4.10	1.53	3.46	2.7	0.62
Children	4.04	0.75	4.13	1.65	3.40	2.3	0.53
Clients/customers	3.79	0.95	4.65	2.59	2.33	4.5	0.74
Co-workers	3.76	0.92	4.43	2.44	2.35	5.7	0.93
Boss	3.52	1.09	4.48	2.82	2.44	2.4	0.52
Alone	3.41	0.69	3.76	1.73	3.12	3.4	0.90
Duration-weighted mean	3.89	0.84	4.31	2.09	2.90		
% time > 0	97%	66%	90%	59%	76%		

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- Feelings of happiness can perhaps best be seen as one element in the vector ℓ_i.

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- Hard to test consistency assumption: we interpret it as a quality requirement to be imposed on happiness measurement.
- If consistency holds, life satisfaction does satisfy the personal-preference principle.
- (Layard) "If we accept the Marxist idea of 'false consciousness', we play God and decide what is good for others, even if they will never feel it to be so".

The same-preference principle

- Is this sufficient? What to do in cases of adaptation and changes/differences in aspirations?

  - Deaton - AIDS in Africa.
  - Loewenstein - effects of loss of limb.

Same-Preference Principle: (ℓ, R, S) is at least as good as (ℓ', R, S') if $\ell R \ell'$, and strictly better if $\ell P \ell'$.

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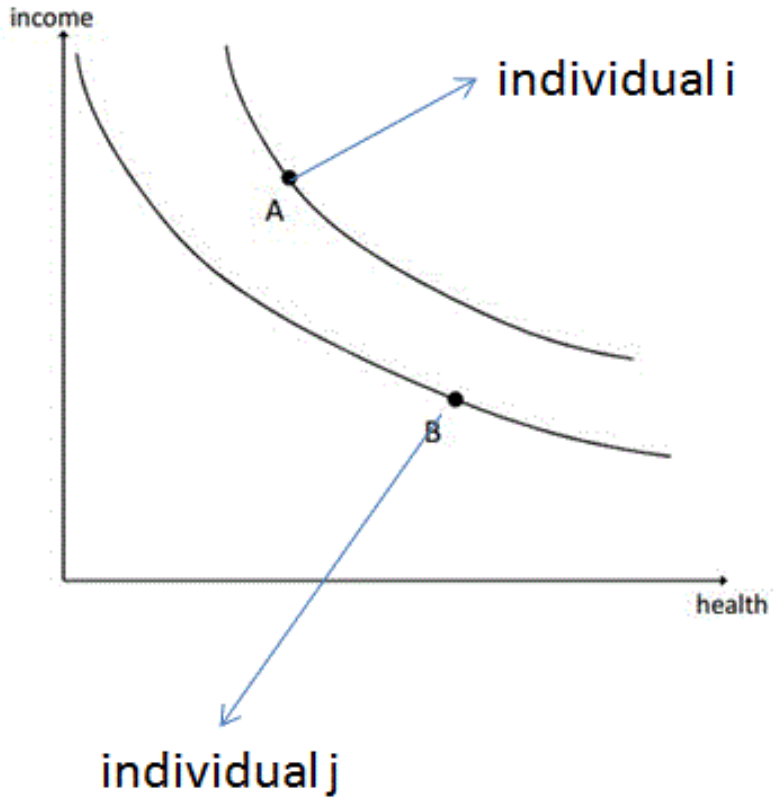

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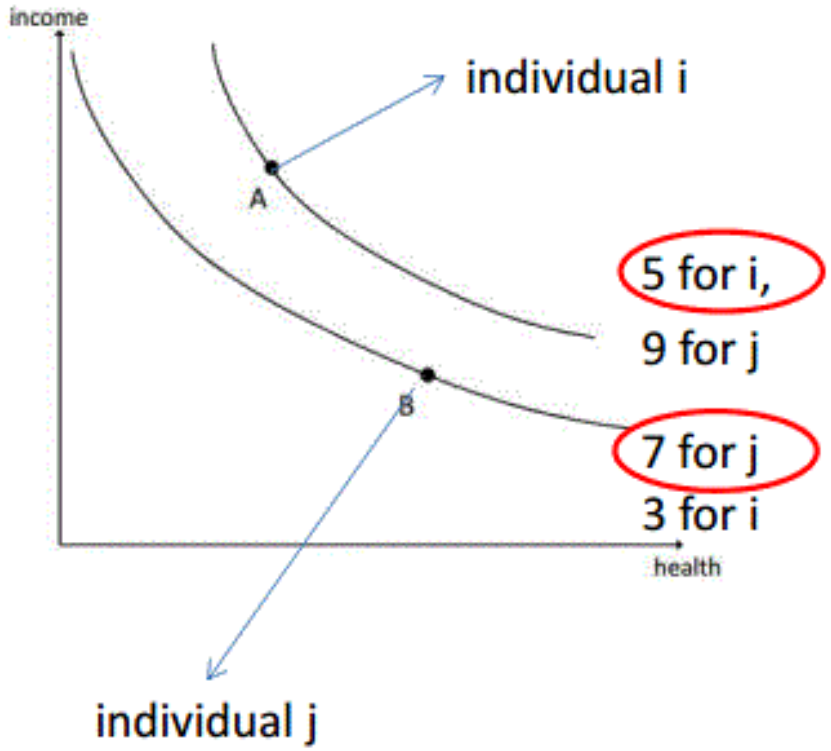

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- People that have adapted their aspirations (the happy poor) should not be compensated.

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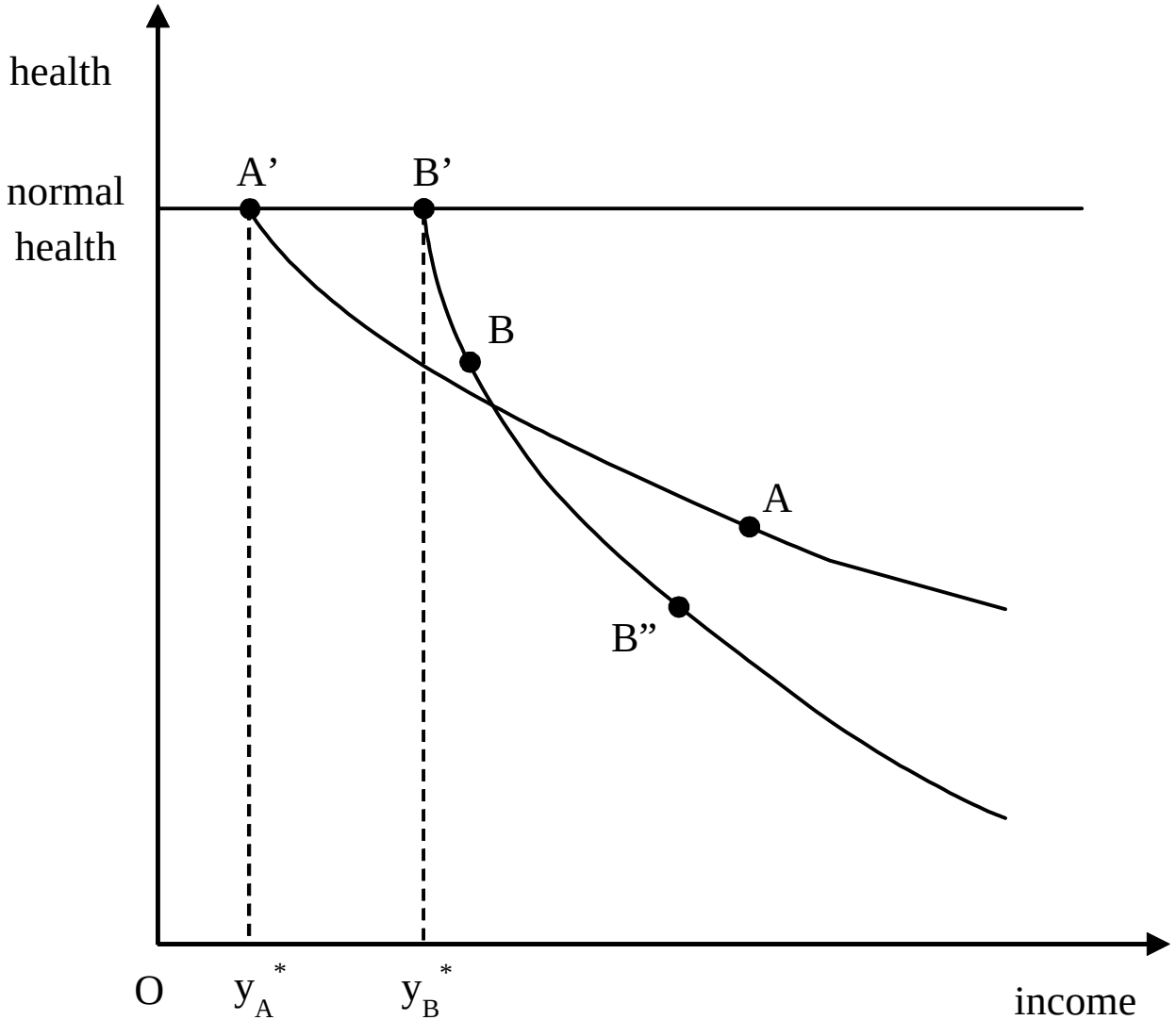
health
normal
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A’
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B
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O
y_A^*
y_B^*
income

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- The equivalent income function $y_i^*(y_i, x_i)$ is a specific cardinalization of the utility function.
- Another interpretation:

$$y_i^* = y_i - WTP_i(x_i \longrightarrow \widetilde{x}; y_i, x_i),$$

where $WTP_i(x_i \longrightarrow \widetilde{x}; y_i, x_i)$ denotes the willingness-to-pay of individual i for a move from x_i to $\widetilde{x}$.

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    - Reference values should be set in such a way that we can accept the implication that when all individuals are in the reference situation for the non-income dimensions, differences in preferences do not matter to determine who is worse or better off.

Questions and difficulties

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  - Reference values should be set in such a way that we can accept the implication that when all individuals are in the reference situation for the non-income dimensions, differences in preferences do not matter to determine who is worse or better off.
  - Equivalent income measures the welfare loss that results from deviations from a "normal" level (which may be personalized).

How to estimate preferences?

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2. Contingent valuation - direct questions about willingness-to-pay. Most relevant for dimensions for which individuals have no or limited choice (health, environment).
3. Satisfaction equations - derive info about marginal rates of substitution (one exploits only the *ordinal* information that is in the data).

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(Fleurbaey and Schokkaert, AEJ: Micro, 2013)

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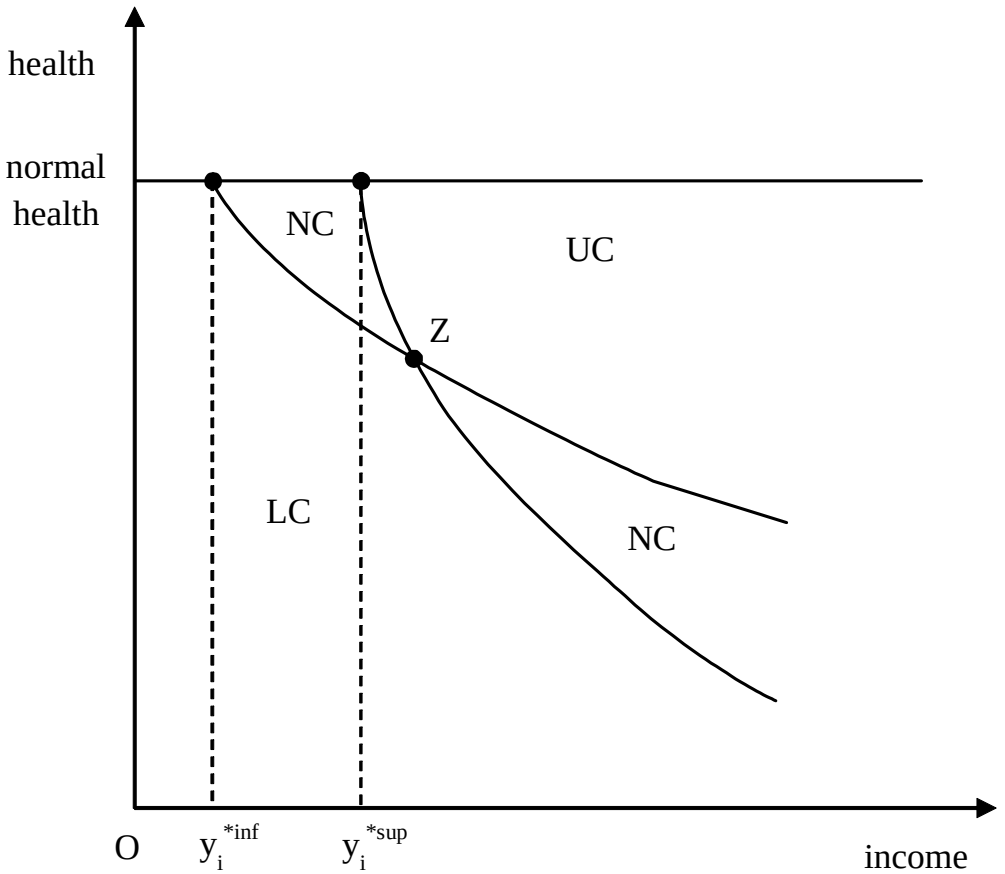

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- In line with the Rawlsian inspiration.

Summary

	functionings	happiness feelings	life satisfaction	equivalent income
dominance	YES	NO	NO	NO
personal preference principle	NO	NO	YES	YES
same preference principle	NO	NO	NO	YES
informational requirement	vector of functionings	happiness (e.g. through experience sampling)	life satisfaction measure	vector of functionings + information about preferences

Structure of the presentation

1. Introduction**.**
2. Historical sketch.
3. Functionings and capabilities.
4. Utility and happiness.
5. Equivalent income.
6. **Respect for preferences and multidimensional inequality measures.**
7. International welfare comparisons.

Limited information

- The only information that is used is information about the distribution matrix.

$$
L = \begin{bmatrix} \ell_1^1 & \dots & \ell_1^m \\ \ell_2^1 & \dots & \ell_2^m \\ \vdots & \vdots & \vdots \\ \ell_n^1 & \dots & \ell_n^m \end{bmatrix} \begin{matrix} \leftarrow \text{Individual } 1 \\ \leftarrow \text{Individual } 2 \\ \vdots \\ \leftarrow \text{Individual } n \end{matrix}
$$

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- Accounting for cumulative deprivation requires that one first constructs an index of well-being at the individual level and then aggregates these well-being indices over individuals.

Pigou-Dalton principle and respect for preferences

- Formulation of transfer principle in the space of functionings:

Pigou-Dalton Transfer Principle $(\ell_i, R_i, S_i)_{i=1}^n$ is strictly better than $(\ell'_i, R_i, S_i)_{i=1}^n$, if for all individuals $k \neq i, j$, we have that $\ell'_k = \ell_k$, and for individuals i and j, we have that for $\delta \in \mathbb{R}_+^m \setminus \{0\}$ $\ell'_i = \ell_i + \delta \leq \ell_j - \delta = \ell'_j$.

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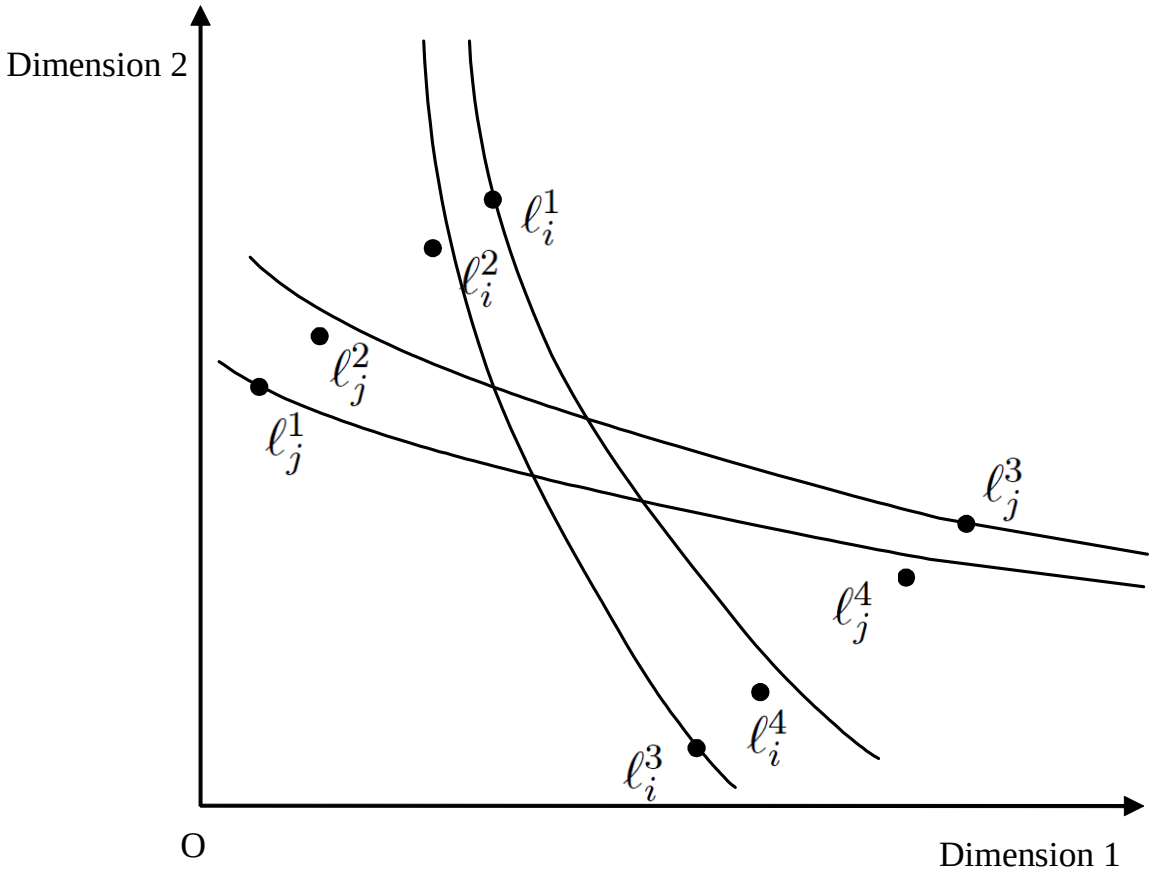
- Respect for preferences?

Weak Pareto Principle $(\ell_i, R_i, S_i)_{i=1}^n$ is strictly better than $(\ell'_i, R_i, S_i)_{i=1}^n$ if for all i, $\ell_i P_i \ell'_i$.

Another conflict

(Fleurbaey and Trannoy, Soc. Choice Welfare, 2003)



Two approaches

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Dominance approaches do not respect heterogeneous individual preferences. Allowing for flexibility in the choice of a **common** *utility function, is very different from accepting that utility functions may differ between individuals.*

A basic message

- There is a deep conflict between *all* multidimensional inequality measures and respect for (heterogeneous) individual preferences.

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- There is a deep conflict between *all* multidimensional inequality measures and respect for (heterogeneous) individual preferences.
- These measures fit well in a perfectionist approach (the non-preference interpretation of functionings), but not in liberal (e.g. Rawlsian) setting.

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An illustration

Based on paper with Koen Decancq.
European Social Survey, 2008 and 2010. (SILC does not contain a question on life satisfaction).
18 countries: 15 EU-members, Switzerland, Norway, the Russian Federation. About 52,000 individual observations.

Life dimensions	**Variable in ESS**
Material living conditions	Total household income per capita (after uprating)
Health	1) Self-reported health 2) Dummy whether being hampered in daily activities by illness/disability/infirmary or mental problem
Productive and valued activities	Unemployment status
Leisure and social interactions	Indicator of how often the respondent meets socially with friends, relatives or colleagues.
Economic and physical security	Indicator of whether the respondent feels safe when walking alone in local area after dark

Average well-being

	Income	Equivalent income	Happiness
	(NO, CH)	(NO, CH)	(DK, CH)
DE	28986 (6)	3188 (10)	7.26 (9)
DK	28162 (7)	6938 (4)	8.35 (1)
FR	25779 (10)	3529 (9)	6.34 (15)
ES	22282 (11)	3182 (11)	7.30 (8)
GR	19388 (13)	2564 (13)	5.71 (17)
	(RU, EE)	(RU, HU)	(GR, RU)

Within-country inequality

	Gini coefficient (income)		Gini coefficient (equivalent income)	
	(CZ, SE)		(NO, DK)	
CZ	0.27	(1)	0.73	(10)
DK	0.28	(3)	0.65	(2)
HU	0.30	(6)	0.77	(17)
SI	0.32	(9)	0.75	(14)
CH	0.34	(14)	0.66	(3)
GB	0.36	(16)	0.72	(9)
GR	0.36	(17)	0.75	(13)
ES	0.38	(18)	0.74	(12)
	(GR, ES)		(HU, EE)	

Growth rates 2008-2010

	income growth		welfare growth (ρ=5)		happiness growth	
	(CH, PL)		(CH, RU)		(HU, EE)	
CH	+ 7.35%	(1)	+9.69%	(1)	+2.23%	(6)
DE	+ 0.09%	(3)	- 4.51%	(9)	+4.46%	(3)
BE	- 0.55%	(4)	+ 4.54%	(4)	+3.33%	(5)
DK	- 1.73%	(8)	-4.53%	(10)	-2.00%	(16)
ES	- 2.24%	(11)	-12.04%	(17)	-0.01%	(15)
GR	- 5.81%	(17)	-22.92%	(18)	-5.78%	(18)
EE	- 8.60%	(18)	-7.24%	(14)	+5.16%	(2)
	(GR, EE)		(ES, GR)		(CZ,GR)	