

# CES Lecture 3: Fairness and poverty - an international experiment

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September 21, 2007

## Introduction I

- How does a move from the national to the international context affect how we should think about distributive justice?
  - This is a core question in the contemporary normative literature and an increasingly important topic in the political debate.
- The normative literature has focused on three questions:
  - Do we have special moral obligations towards compatriots?
  - How should a theory of justice take account of absolute poverty?
  - What role does considerations of fairness, in particular considerations of individual responsibility, have in an international context?

## Introduction II

- In the political debate, different views on international distribution focus on different types of considerations:
  - the special obligations we have towards our compatriots.
  - the obligations towards people living in absolute poverty.
  - the fairness of the distribution of what is produced.
- Surveys and other studies suggest that there are substantial differences between countries in moral values. We conducted an experiment together with Erik Ø. Sørensen and Karl Ove Moene do study this issue.

## Experimental design I

- The experiment was a dictator game with a production phase.
- We had participants from four countries.
  - Two of the poorest countries in the world; Tanzania and Uganda.
  - Two of the richest countries in the world; Norway and Germany.
- All participants were recruited from the general student population at the University of Oslo, the University of Mannheim, the University of Makerere and the University of Dar es Salaam.
- The experiment took place simultaneously and with interaction between all participating countries.
- Six sessions with a total of 391 participants.

## Number of participants per session

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session	Country				total
	Norway	Germany	Uganda	Tanzania	
28/2, 1100	20	0	22	21	63
28/2, 1300	17	18	0	0	35
1/3, 0900	20	17	22	21	80
1/3, 1100	21	20	22	22	85
1/3, 1300	22	20	22	21	85
2/3, 1000	22	0	0	21	43
total	122	75	88	106	391

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## Experimental design II

- The production phase.
  - All participants copied a text for 30 minutes and their production,  $a_i$ , was the number of correct words they managed to type in that period.
  - All participants were, before they started to produce, randomly assigned a price per correct word of either  $p_i = 0.1$  USD or  $p_i = 0.05$  USD.
- Individual production value is  $x_i(a_i, p_i) = a_i p_i$ .

## Results from the production phase

- Large international differences in productivity.
  - The participants from the rich countries produced almost three times as many correct words as the participants from the poor countries.
- No significant effect of prices on productivity.

## Production by country

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	Norway	Germany	Uganda	Tanzania
Mean	750.0	682.7	271.0	242.5
SE(mean)	25.4	24.9	13.2	10.7
Standard deviation	280.6	216.3	123.6	110.6
minimum	250	200	50	0
25th percentile	550	550	200	150
75th percentile	900	800	300	300
maximum	1700	1400	650	650

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## Production by country and price per correct word

Country of decision maker	price (USD/word)		
	0.05	0.10	total
Norway	756.9 (37.0)	742.1 (34.5)	750.0 (25.4)
Germany	653.4 (43.6)	701.1 (30.1)	682.7 (25.0)
Uganda	270.8 (20.3)	271.2 (16.0)	271.0 (13.2)
Tanzania	239.6 (11.5)	245.3 (18.2)	242.5 (10.7)

## Experimental design III

- The distribution phase.
  - After the production phase ended, the participants were anonymously matched with a sequence of other participants, and asked to propose a distribution of the total production value  $X = x_1 + x_2$ .
  - They could meet participants from all participating countries.
  - They received information about the other participant's country, production and price.
- One proposal was randomly drawn after the distribution phase ended to determine the actual outcome.

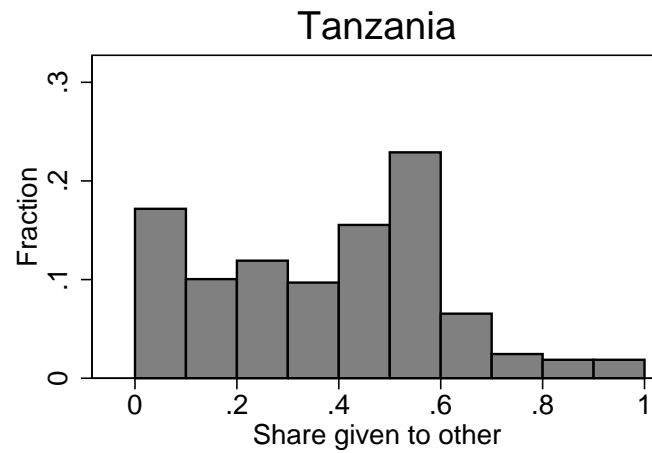
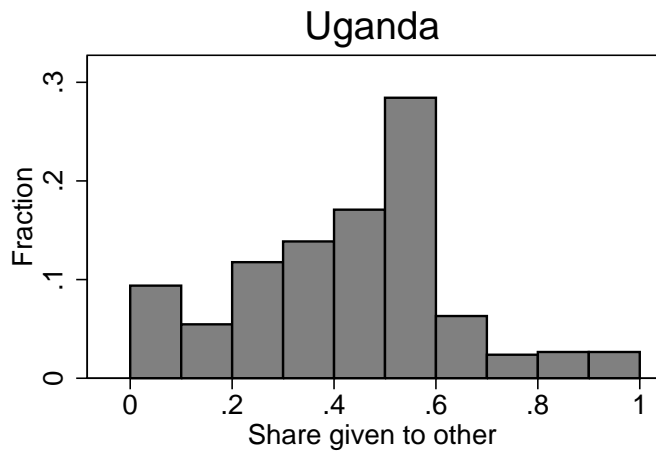
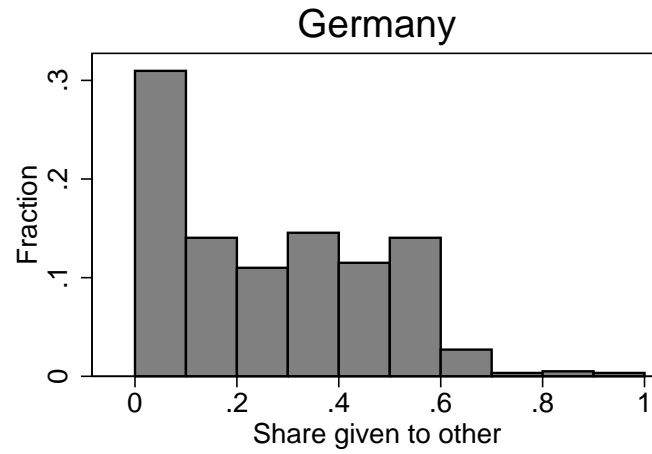
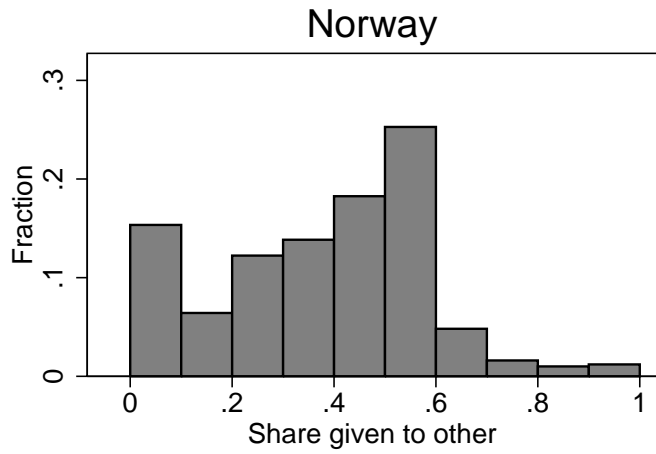
## **Results from the distribution phase**

- Large international differences in the average share given to the other participant.
- No systematic relationship between average share given and the income level in the country.
- Our design allows us to measure the average importance attached to each of the three types of moral considerations.

**Average share given (unconditional) by country combination**

	total	Country of opponent			
		Norway	Germany	Uganda	Tanzania
Norway	0.365 (0.007)	0.378 (0.013)	0.368 (0.015)	0.368 (0.015)	0.348 (0.012)
Germany	0.256 (0.009)	0.273 (0.015)	0.255 (0.020)	0.251 (0.016)	0.236 (0.017)
Uganda	0.417 (0.008)	0.426 (0.014)	0.459 (0.021)	0.418 (0.016)	0.381 (0.013)
Tanzania	0.366 (0.008)	0.379 (0.014)	0.433 (0.022)	0.356 (0.014)	0.318 (0.015)

# Histograms of share given to others by country



## Fairness

- The importance attached to fairness can be measured as the average share given to participants with the same nationality.
  - The participants give substantial amounts to the opponent in such situations.
  - Fairness is not a luxury good.

## Special moral obligations towards compatriots

- The extent to which the participants feel a special moral obligations towards compatriots can be measured as the average share given to participants with the same income level, but with a different nationality, relative to the average share given to compatriots.
  - We do not observe substantial differences for any of the four countries.

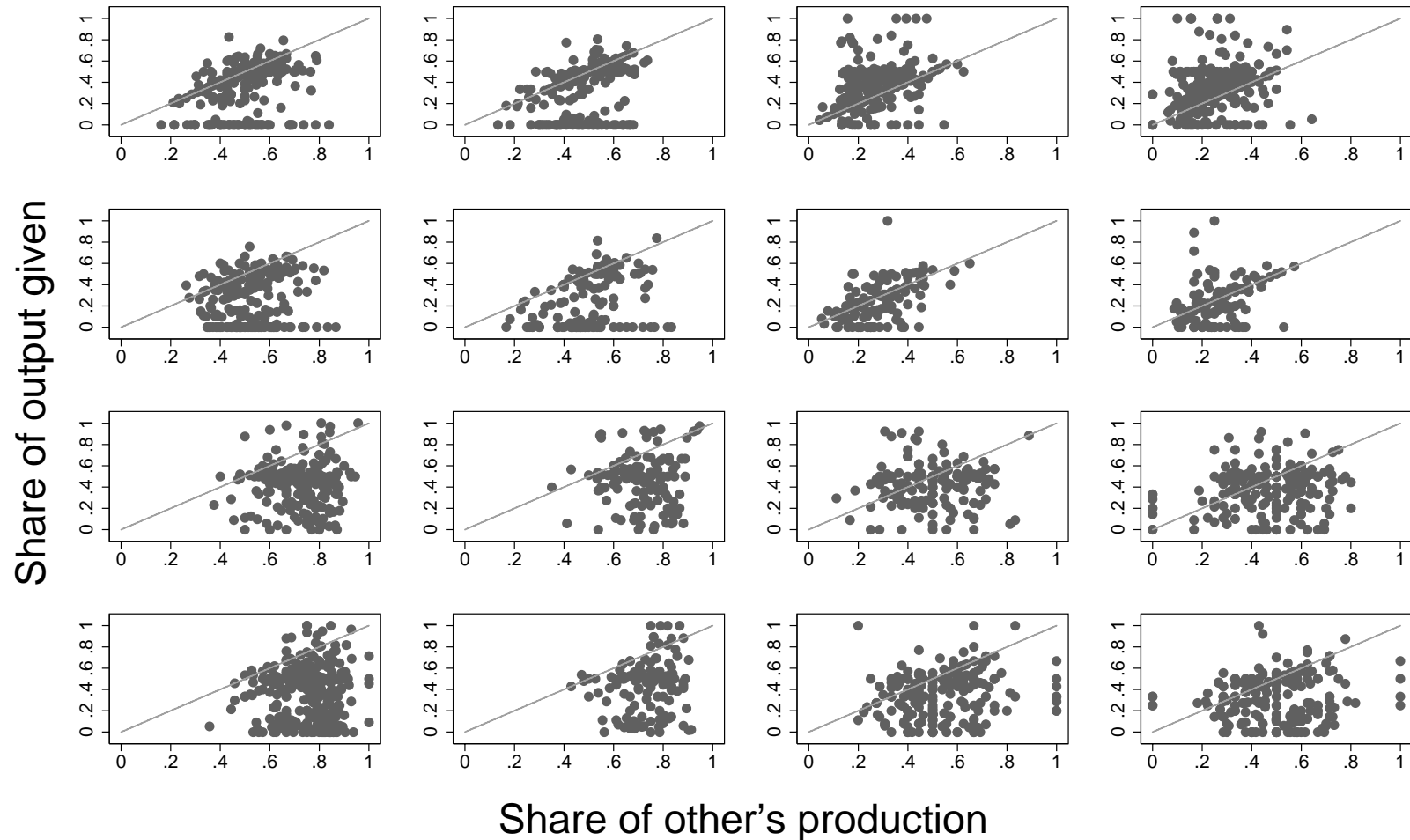
## Poverty

- The importance attached to poverty can be measured as the difference between the average share left to the opponent of the opponent's production value for a rich and a poor opponent.
- We observe that the share left to the opponent of the opponent's production value is much higher (lower) when a rich (poor) individual meets a poor (rich) individual than when he meets someone from his own income group.
  - But this is not a perfect measure. Why?

**Average share left to opponent of the opponent's  
production value**

	Country of opponent			
	Norway	Germany	Uganda	Tanzania
Norway	0.793 (0.029)	0.770 (0.035)	1.617 (0.102)	1.678 (0.094)
Germany	0.590 (0.035)	0.514 (0.040)	1.018 (0.075)	1.104 (0.094)
Uganda	0.618 (0.022)	0.660 (0.033)	0.986 (0.058)	0.904 (0.042)
Tanzania	0.538 (0.020)	0.598 (0.031)	0.767 (0.038)	0.700 (0.037)

# Share given vs share of other's production for country combinations



Row/column order: Norway, Germany, Uganda, Tanzania.

Decisionmaker in row-country, opponent in column-country

## Modelling strategy:

- Given the descriptive statistics, we model model people as moral cosmopolitans motivated by; *self-interest*, *poverty* and *fairness*.
- We treat the participants from the two rich countries as one group and the participants from the two poor countries as one group, which allows us to focus on the following differences:
  - Differences in the weight attached to fairness and to poverty between poor and rich countries.
  - Differences in the prevalence of fairness ideals between poor and rich countries.

## Modelling fairness ideals:

- $m^{SE} = X/2$  **Strict egalitarianism**
- $m^{ME} = \frac{a_1}{a_1+a_2}X$  **Meritocratism**
- $m^L = p_1 a_1$  **Libertarianism**

## Modelling poverty:

$m^P = 0$  Rich decisionmaker meets poor opponent.

$m^P = X$  Poor decisionmaker meets rich opponent.

- Poverty considerations are not always relevant, and the dummy  $\delta$  takes the value 1 when participants from countries with different income levels meet, otherwise it is 0.

## The utility function

We model that the participants maximize the following utility function:

$$V^{k(i)}(y; \cdot) = y - \beta_i(y - m^{k(i)})^2/2X - \delta\alpha_i(y - m^P)^2/2X.$$

where,  $y$  is the income to  $i$ ,  $\beta_i$  is the weight attached to fairness, and  $\alpha_i$  is the weight attached to fairness.

For an interior solution, the optimal proposal,  $y_i^*$ , is

$$y_i^* = \left(\frac{\beta_i}{\beta_i + \delta\alpha_i}\right)m_i^{k(i)} + \left(\frac{\delta\alpha_i}{\beta_i + \delta\alpha_i}\right)m_i^P + \left(\frac{1}{\beta_i + \delta\alpha_i}\right)X.$$

## Structural estimation

- We estimate a random utility version of the model, where we have discrete choices  $y \in \mathcal{Y} = \{0, 2.5, \dots, \mathbf{p} \cdot \mathbf{a}\}$ .
- The vector we estimate for each group is:

$$\boldsymbol{\theta} = (\mu_\alpha, \mu_\beta, \sigma_\alpha, \sigma_\beta, \gamma, \lambda^{SE}, \lambda^{ME}, \lambda^{LER}, \lambda^L),$$

where  $(\lambda^{SE}, \lambda^{ME}, \lambda^L)$  are the population shares that hold different ideals.

- The likelihood of observing the choices of a particular individual is given by:

$$L_i(\boldsymbol{\theta}) = \sum_k \iint \prod_{j=1}^{J_i} \frac{\exp(\gamma V^k(y_{ij}, \mathbf{a}_{ij}, \mathbf{p}_{ij}, \beta, \alpha))}{\sum_{s \in \mathcal{Y}_{ij}} \exp(\gamma V^k(y_{ij}, \mathbf{a}_{ij}, \mathbf{p}_{ij}, \beta, \alpha))} f(\alpha, \beta; \boldsymbol{\theta}) d\alpha d\beta.$$

## Structural estimates

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	High income	Low income
Share SE	0.221	0.537
Share ME	0.433	0.226
Share L	0.346	0.238
$\gamma$	12.578	6.629
$\mu_\alpha$	-0.034	-0.040
$\mu_\beta$	1.797	2.463
$\sigma_\alpha$	3.657	2.178
$\sigma_\beta$	3.409	2.357

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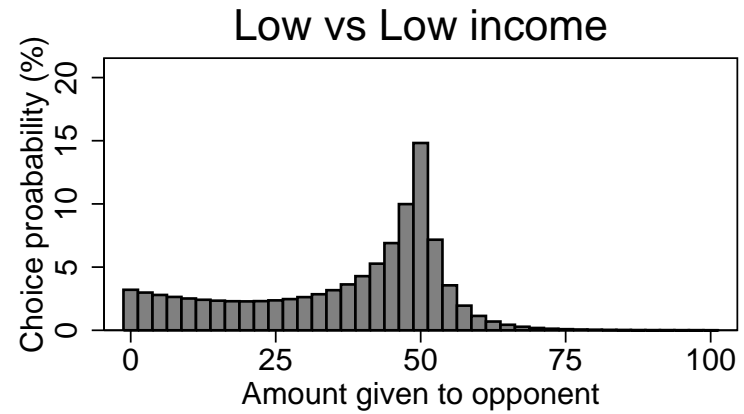
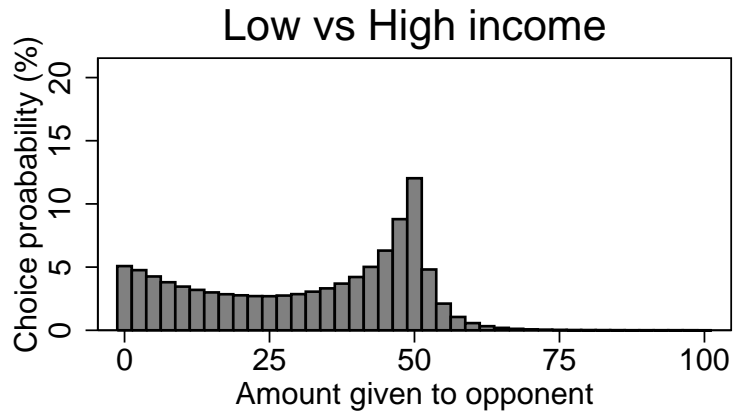
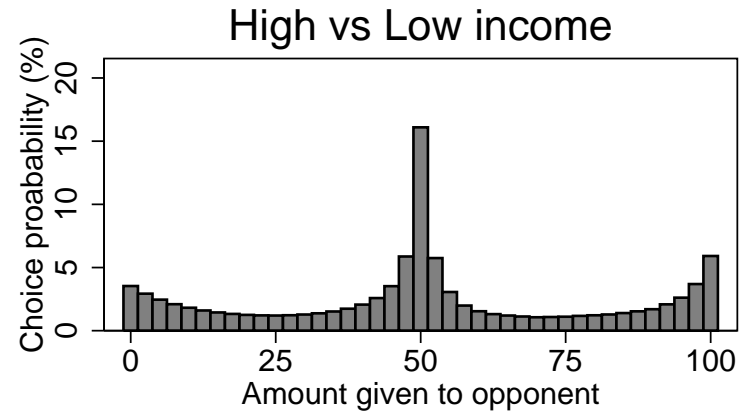
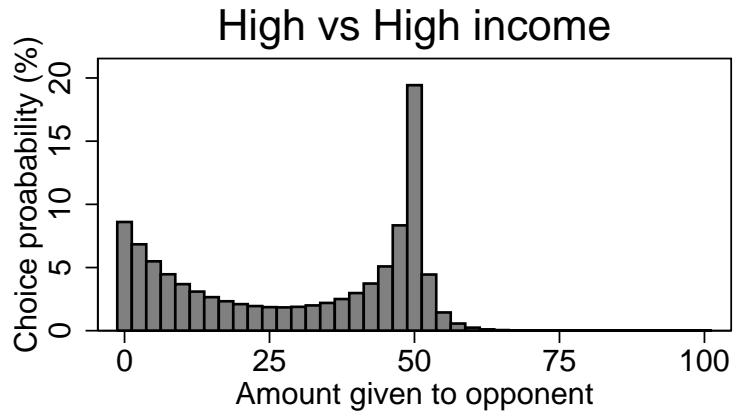
$\log L$	-7446.721	
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## Interpreting the results

- There are large differences in the fairness ideal in the rich countries and in the poor countries.
  - Strict egalitarianism much more prevalent among the participants from the poor countries.
  - Meritocratism and libertarianism much more prevalent among the participants from the rich countries.
- What can we say about the relative weight attached to fairness considerations and poverty considerations?
  - In order to interpret our estimates in terms of heterogeneity of  $(\alpha, \beta)$ , we use our estimates to predict what choices the participants would make in situations where all fairness ideals would agree that that an equal split was the fair solution.

# Hypothetical dictator situation



Situation variables:  $a_1=a_2=500$ ,  $p_1=p_2=0.1$ ,  $X=100$ .  
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## Interpreting the simulation

- Both poverty and fairness considerations are important in rich and poor countries.
- Poverty considerations are more important in the rich countries.
- Fairness considerations seem to be equally important in both countries.

## Concluding remarks

- Absolute poverty does not triumph over other moral considerations, but it matters.
- Fairness considerations are important in all countries, but pluralism within countries and substantial differences between countries.
- Moral cosmopolitanism. People do not seem to feel that they have special moral obligations towards compatriots.