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Why morally motivated public good provision can lead to polarization and minimal contributions

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This paper

- Brekke, Kverndokk, Nyborg (2003)
  - Morally motivated consumers contribute to public goods
- Here: add heterogeneity & social interaction
  - Income inequality, ethical disagreement
  - Social learning, social migration
- Voluntary private provision: Strong polarization and minimal contributions in steady state
- Tax-funded government provision: disagreement but not necessarily strong

- Short run
  - Decides contribution. Ethical views & social peer groups fixed.
- Long run:
  - Social learning of ethical views,
  - Social migration between peer groups.

Short-run: voluntary contributions

(1) $Y_i = c_i + e_i$ Exog. inc. spent on consumption/contributions

(2) $E = \sum_{i=1}^{N} e_i$ $c_i \geq 0, e_i \geq 0$

- Preferences for consumption, public good, self–image, social image

(3) $U_i = \ln c_i + \gamma E + I_i + S_i$ $\gamma > 0$

- Self-image: distance to what *i* finds morally right for herself (e_{ii}^*)

(4) $I_i = \begin{cases} -\frac{\alpha}{2}(e_i - e_{ii}^*)^2 & for\ e_i < e_{ii}^* \\ 0 & otherwise \end{cases}$ $\alpha > 0$

- Social image: distance to what *i*'s peers on average find right for *i* (e_{iG}^*)

(5) $S_i = \begin{cases} -\frac{\beta}{2}(e_i - e_{iG}^*)^2 & for\ e_i < e_{iG}^* \\ 0 & otherwise \end{cases}$ $\beta > 0, e_{iG}^* = \frac{\sum_{j \in G} e_{ij}^*}{N_G}$

The right thing to do: maximize social welfare

- Subjective social welfare functions (image concerns welfare irrelevant)

(6) $W_i = \sum_{j=1}^{N}[\mu_{ji}(\ln c_j + \gamma E)]$ where $\sum_{j=1}^{N} \mu_{ji} = 1$

- e_{ji}^*, j's morally ideal contribution in i's view: the e_j that maximizes W_i.
- Measure q_i of i's libertarianism (anonym. & cont. welfare weights)

$$\mu_{ji} = \mu_{ji}(Y_j) = \frac{(1-q_i)\bar{Y} + q_i Y_j}{N\bar{Y}}$$ where $\bar{Y}$ is average income.

  - Egalitarian ($q_i = 0$): rich ($Y_j > \bar{Y}$) should contribute a lot
  - Libertarian ($q_i = 1$): poor ($Y_j < \bar{Y}$) should also contribute their share
- For rich j, e_{ji}^* *de*creases in q_i. For poor j, e_{ji}^* *in*creases in q_i.

Egalitarian $q_i = 0$ —————————— $q_i = 1$ Libertarian

- Agreement: socially optimal public good supply E*

- Disagreement: fair burden-sharing

Reluctant social learning

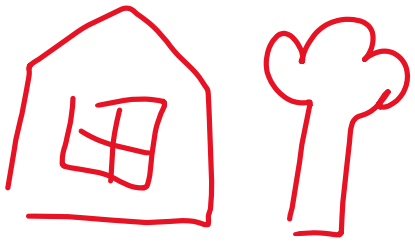
- Each period t: i meets j from own peer group
  - Imperfectly observes j's view q_j^t $\quad \mathrm{E}(\tilde{q}_{ji}^t) = q_j^t$
  - Moves towards j's believed view $\tilde{q}_{ji}^t$
  - - but *less* if move increases i's own moral burden e_{ii}^*

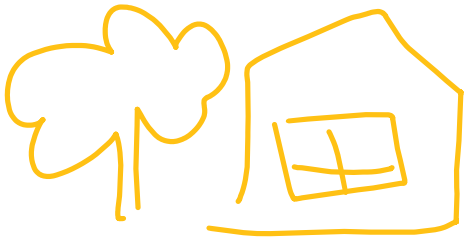
$$\Delta q_i^t(i \in R) = \begin{cases} \delta(\tilde{q}_{ji}^t - q_i^t)\Delta t & if\ \tilde{q}_{ji}^t \geq q_i^t \\ \delta(1-r)(\tilde{q}_{ji}^t - q_i^t)\Delta t & if\ \tilde{q}_{ji}^t < q_i^t \end{cases}$$

  - The rich: reluctant to adopt egalitarian views
  - The poor: reluctant to adopt non-egalitarian views
- Combination uncertainty & reluctance: views may move far outside initial range

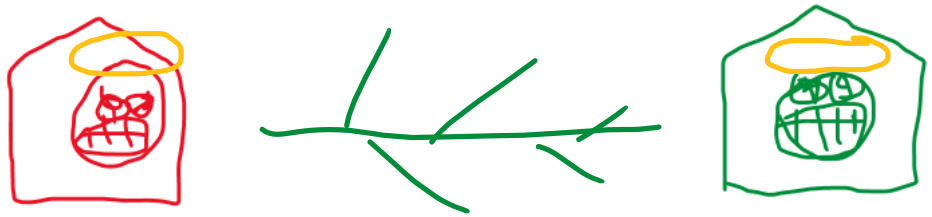
Social migration

- Occasionally reconsiders:
  - «Would they like me better in the other group?»
- Poor prefer more egalitarian peers
- Rich prefer libertarian peers





Equilibrium: Segregation, polarization, minimal contributions



- In the steady state,
- all the rich are in one social group and hold a completely libertarian view;
- all the poor are in the other social group and hold a completely egalitarian view.
- This is an **absolute contribution minimum**: no other combination of ethical views and sorting into groups would yield strictly lower total contributions to the public good.

Government provision

- Tax-funded government provision:

(1') $Y_i = c_i + T_i + \epsilon_i$ $\epsilon_i \geq 0$

(2') $E = E^{Gov} + \sum_{i=1}^{N} \epsilon_i$.

- Balanced government budget:

(7) $E^{Gov} = \sum_{j=1}^{N} T_i$.

- Policy: according to view of actual/ hypothetical voter m, q_m
- $E^{Gov} = E^*$
  - Everyone agrees
- $T_i = e_{im}^*$
  - Rich i with $q_i > q_m$: «T_i too high»
  - Poor i with $q_i < q_m$: «T_i too high»

Segregation but limited disagreement

Any state such that 1) all rich are in one group, all poor in the other; 2) all rich agree on q_R, all poor agree on q_P; and 3) $q_R > q_m > q_P$, is a stable state.

- Everyone finds own group's taxes too high, others' too low
  - No migration: new peers would think you should pay more
  - No reluctance: any small change in q_i would leave $e_{ii}^* = 0$
- Polarization stops even if q_R and q_P are close
- Requires political process driving compromise

Summing up

- Morally motivated contribute voluntarily
- Social mechanisms: reduce moral burden in long run
  -> polarization, segregation, minimal contributions

Summing up

- Morally motivated contribute voluntarily
- Social mechanisms: reduce moral burden in long run
  -> polarization, segregation, minimal contributions
- Government provision: segregation but not polarization