Determinants of Social Conflict

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Summary of joint works with Laura Mayoral and Debraj Ray

Posadas, 14 November 2014

Sections:

1.- Summary of literature

2.- Measuring social divisions

3.- A model of conflict

4.- Approximating equilibrium

5.- What data say

6.- Tasks ahead

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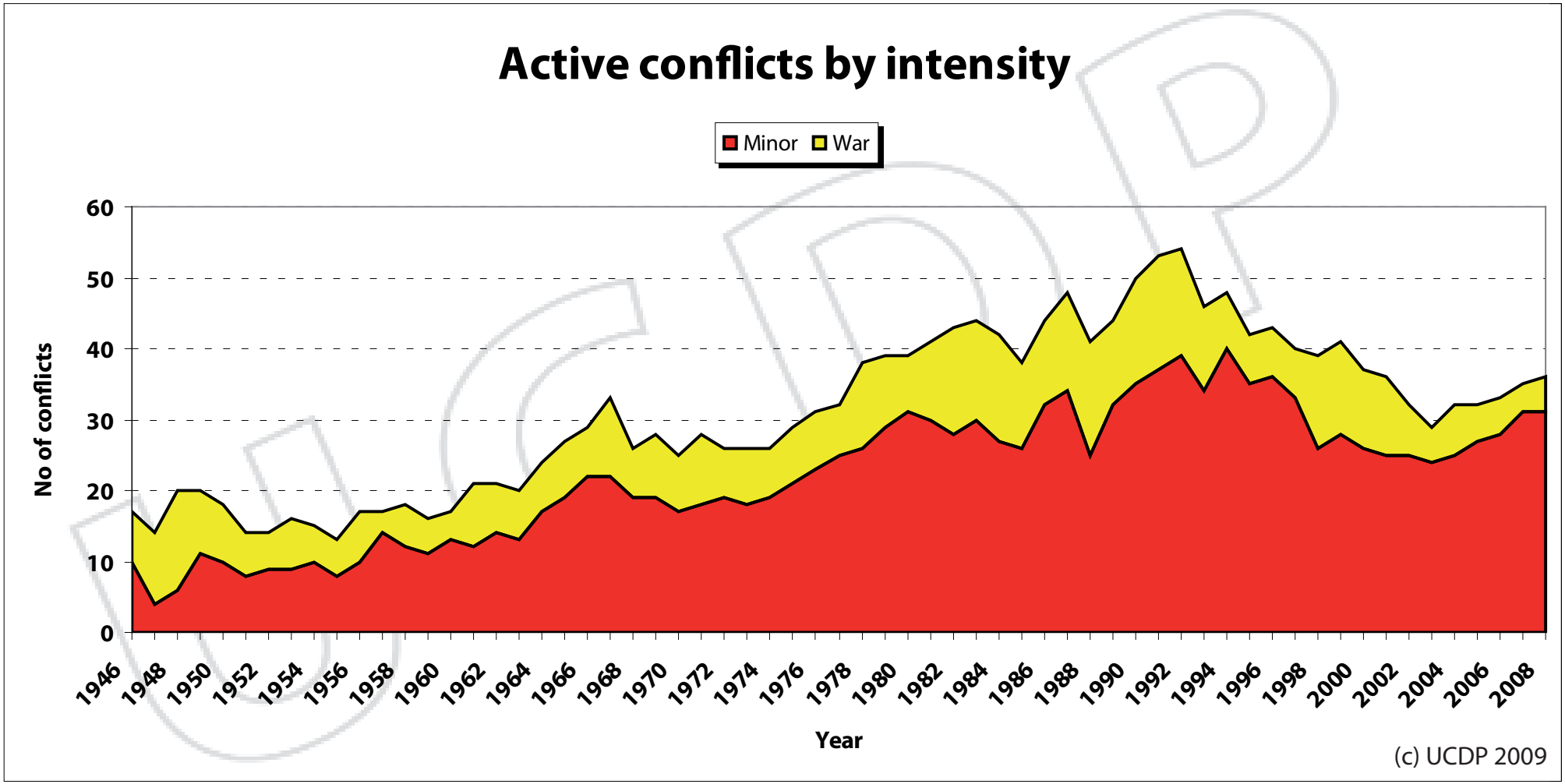
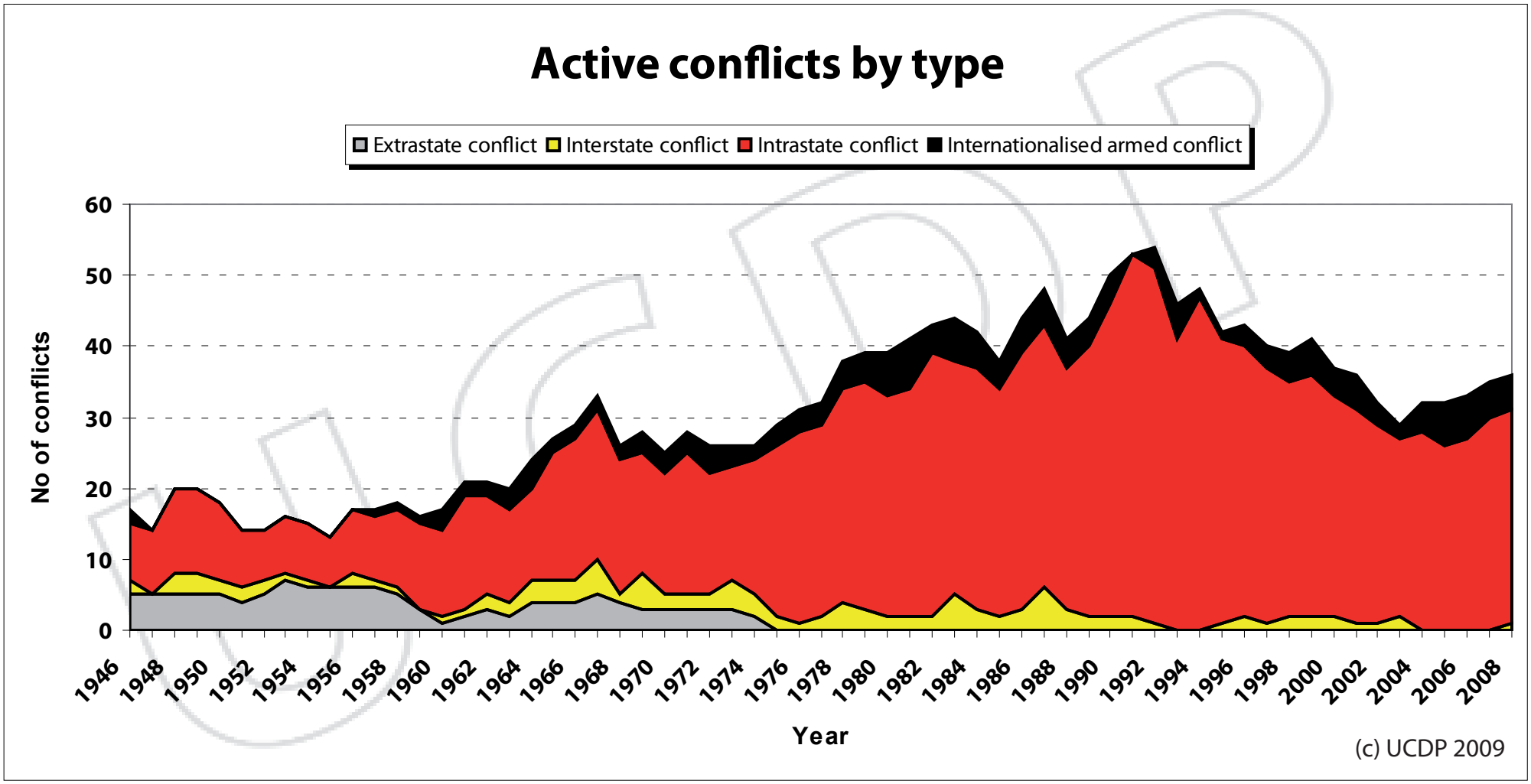
- Economic costs of civil wars: 8% of world GDP (Hess (2003))

- Bozzoli, Bruck, and de Groot find that global GDP in 2007 would have been 14.3 % higher if there had not been conflict since 1960.

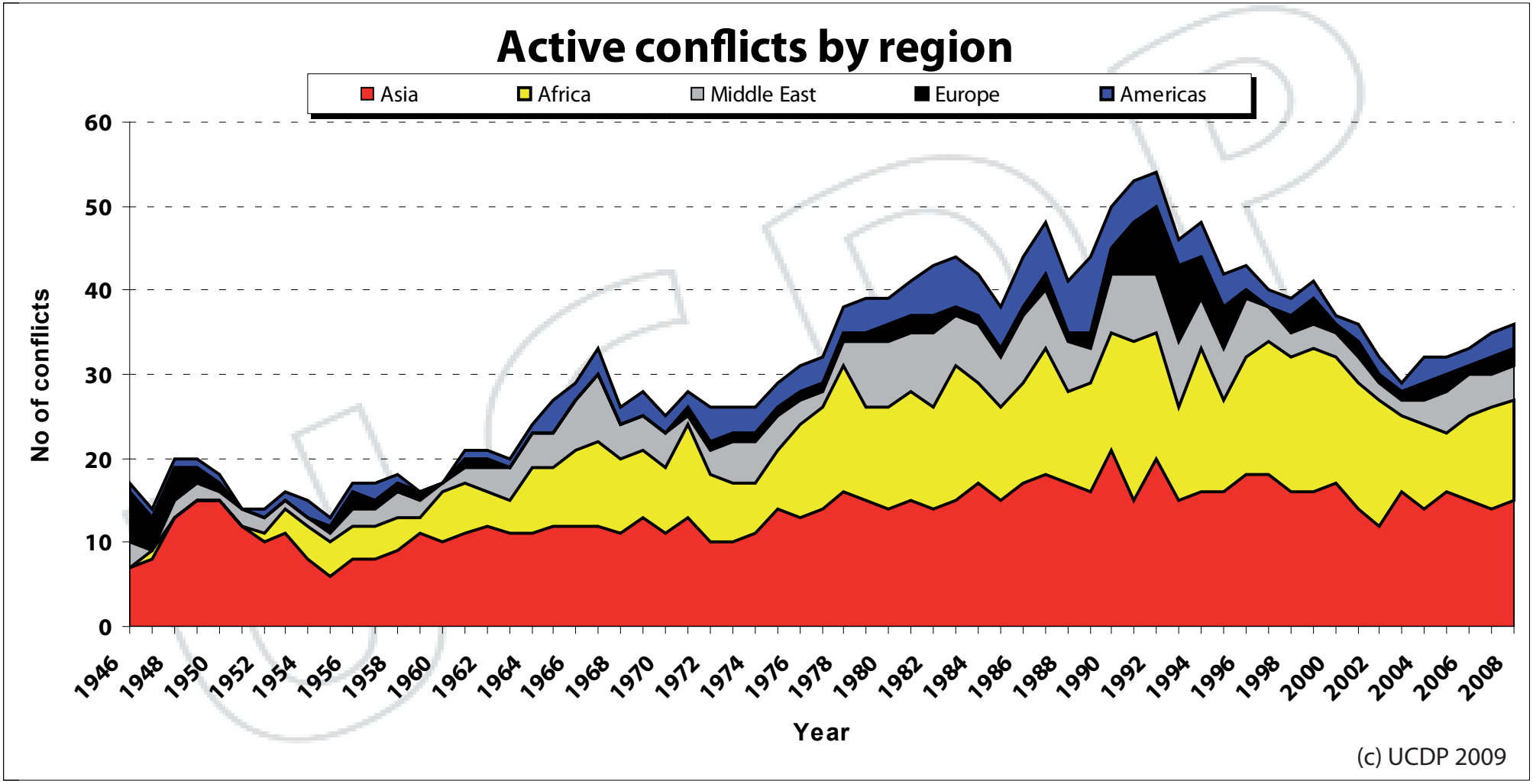
How much conflict: intensity 1946-2009



How much conflict: civil vs international war 1946-2008



How much conflict: violent regions 1946-2008



The Ubiquity of Internal Conflict

- There are two remarkable facts about social conflict that deserve notice:

- First, within-country conflicts account for an enormous share of deaths and hardship in the world today.

- Second, internal conflicts often appear to be ethnic in nature rather than driven by economic class differences.

Class and Civil Conflict

- For most of the 20th C class struggle, or more generally, economic inequality has been viewed as the main driver of social conflict in industrial or semi-industrial society.

This clearly is Marx's dominant influence in the social sciences. In Sen's [1972] words: *"the relation between inequality and rebellion is indeed a close one".*

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- Economic demarcation across classes is a two-edged sword: while it breeds resentment, the very poverty of the have-nots deprives them from the means for a successful insurrection.

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- Brubaker and Laitin (1998), "[An] aspect of the post-Cold War world to highlight is the eclipse of the left-right ideological axis that has defined the grand lines of much political conflict — and many civil wars — since the French Revolution . . . [T]his has led to a marked ethnicization of violent challenger-incumbent contests."

Etnicity and Civil Conflict

- The widespread ethnic nature of conflict sugests several questions:

- Do "ethnic divisions" predict conflict within countries?

- How do we conceptualize those divisions?

- If it is indeed true that ethnic cleavages and conflicts are related, how do we interpret such a result?

- Is ethnic conflict driven by "primordial", ancestral ethnic hatreds?

- Or, are they driven by "more rational" forms of antagonism, such as the instrumental use of ethnicity to achieve political power or economic gain?

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Our work tries to provide answer to some of these questions.

Etnicity and Civil Conflict

- First contributions to the study of the role of ethnicity in civil conflicts:

Collier (2001), Collier and Hoffler (2004), Fearon and Laitin (2003), Miguel et al. (2004) or Montalvo and Reynal-Querol (2005). Survey by Blattman and Miguel (JEL 2010).

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- Why is ethnicity relevant?

  - Primordialist: Ancestral hatred. Huntington's clash of civilisations.

  - Instrumentalist: Ethnicity is used as a marker to achieve other goals, typically political or economic benefits.

Fractionalization and social antagonism

How to measure ethnic diversity in a society?

Fractionalization

This is the Hirschman-Herfindahl index

$$F = \sum_i n_i(1 - n_i),$$

Has been a most used index of ethnic diversity. Intuition.

Fearon and Laitin (2003) or Montalvo and Reynal Querol (2005): F is not statistically significant in explaining conflict.

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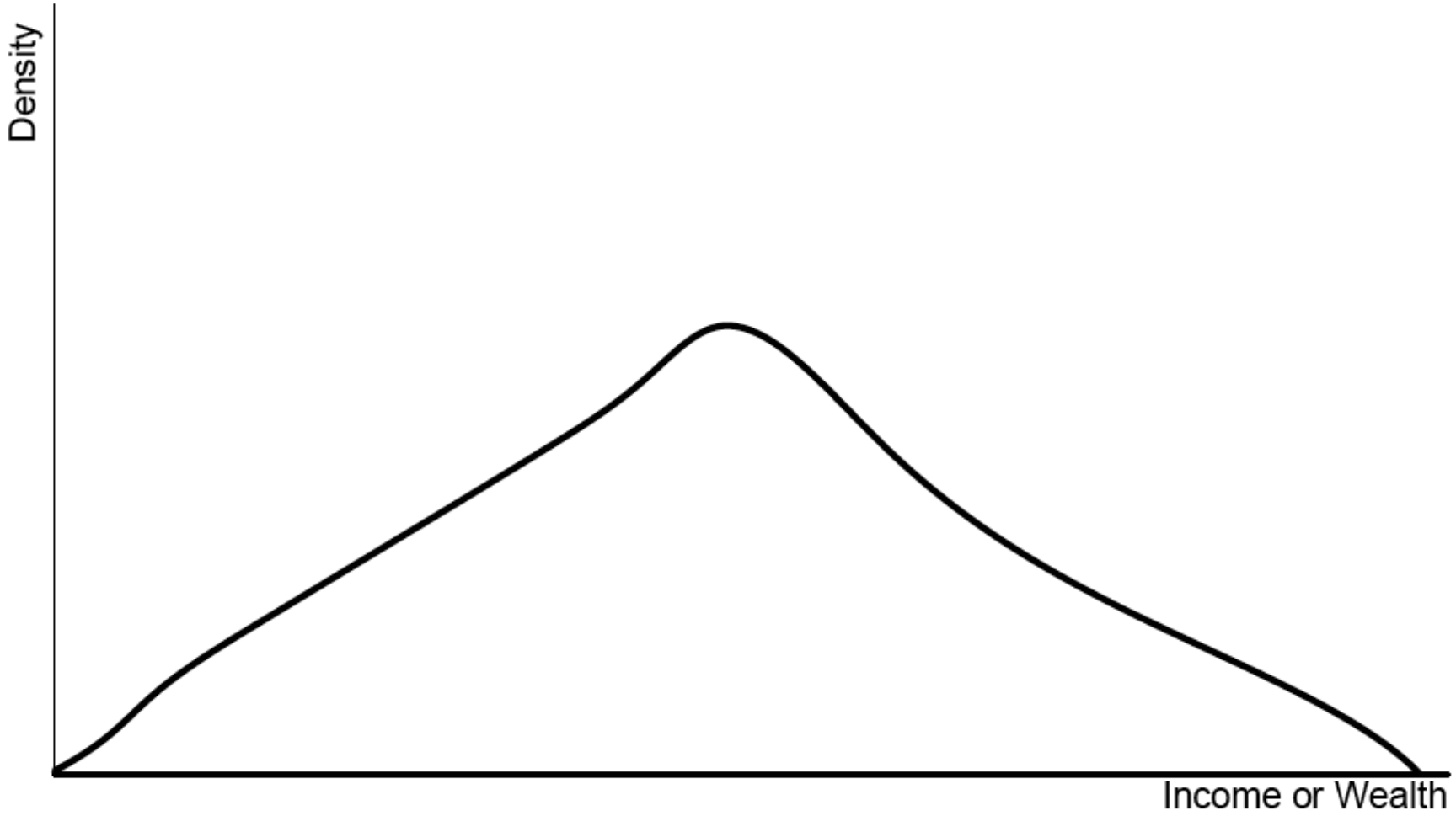
Polarisation seems more appropriate to capture potential conflict.

Example: progressive transfers and their effect on the Lorenz curve



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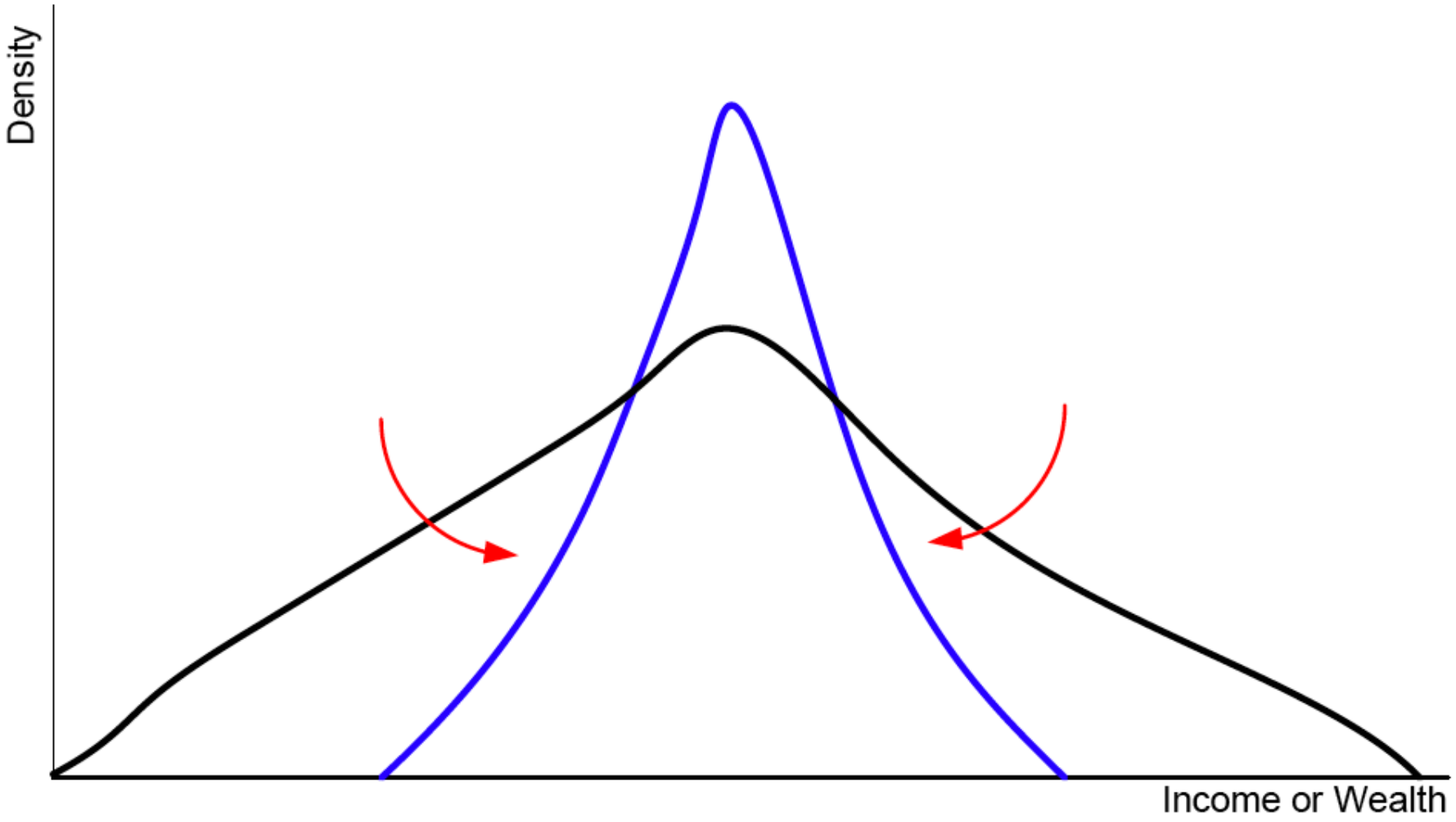
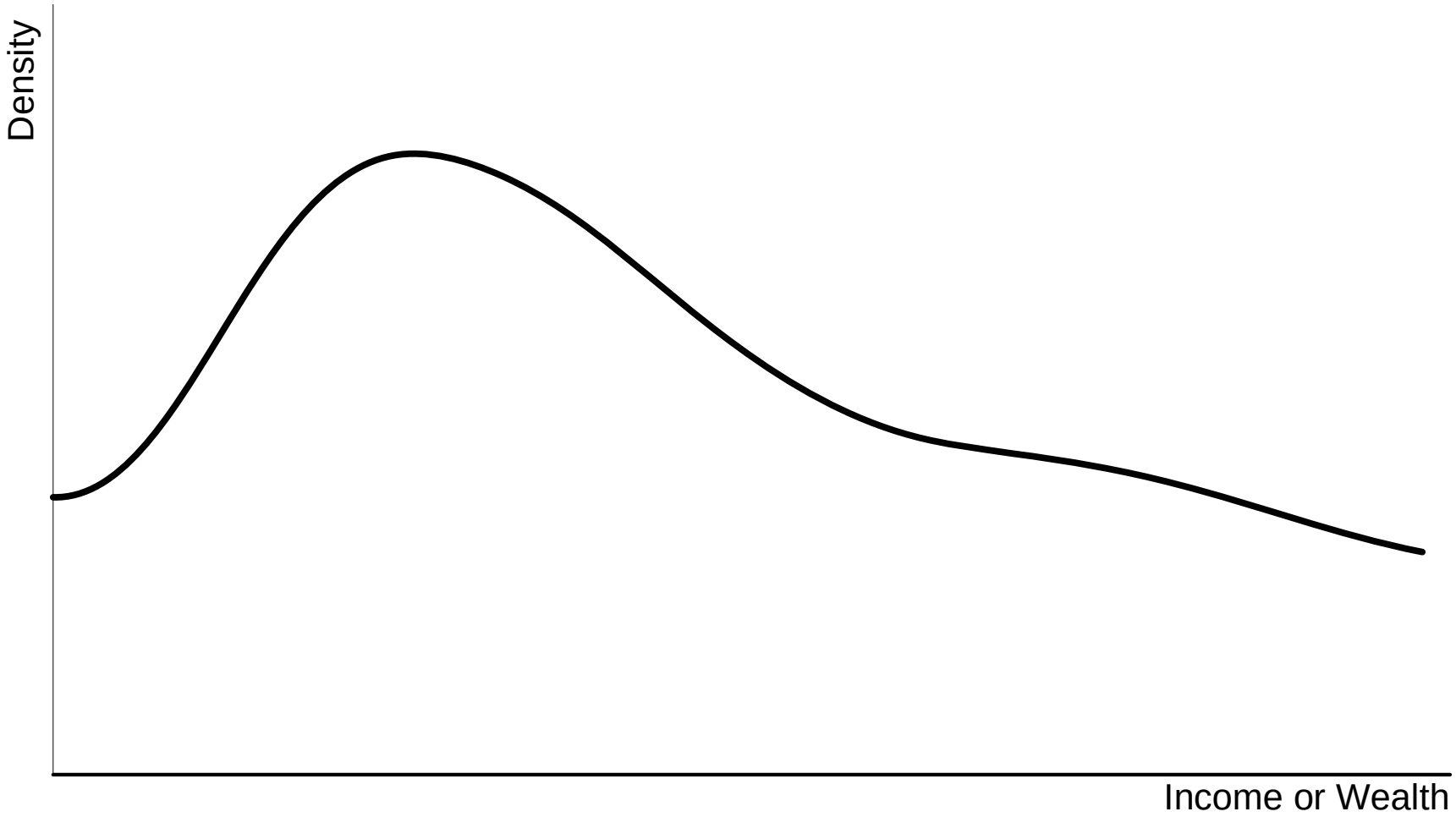
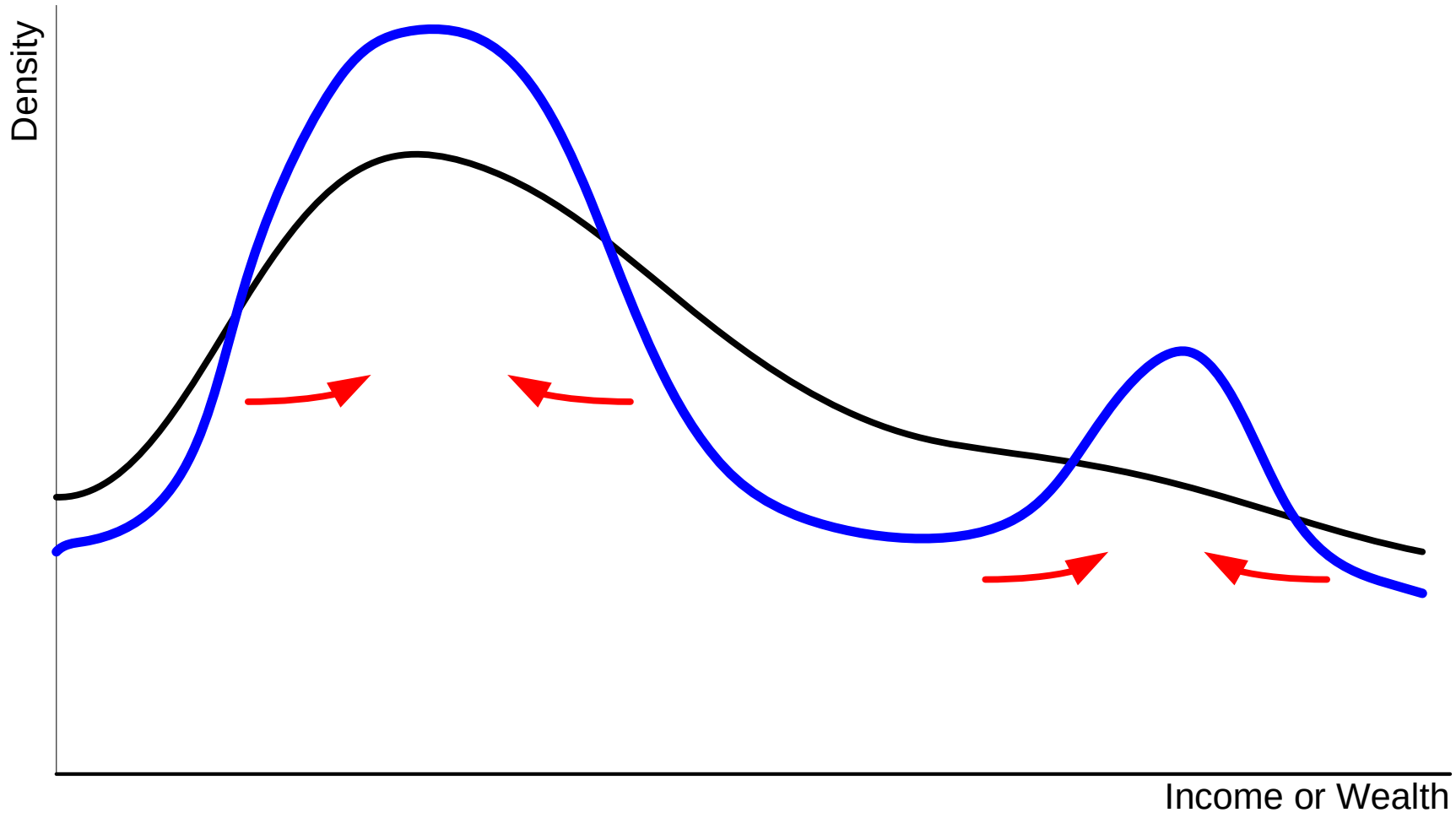



Density
Income or Wealth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Polarization and social antagonism

Start with the premise that social antagonism causes civil conflict.

- Antagonism between a member of group i towards a member of group j is driven by: (i) alienation of i versus j [d_{ij}] and by (ii) i's group identity depending of the group size [n_i].

- **Define:** Polarization = sum of all inter-personal antagonisms

$$P = \sum_i n_i \sum_j n_j A[n_i, d_{ij}]$$

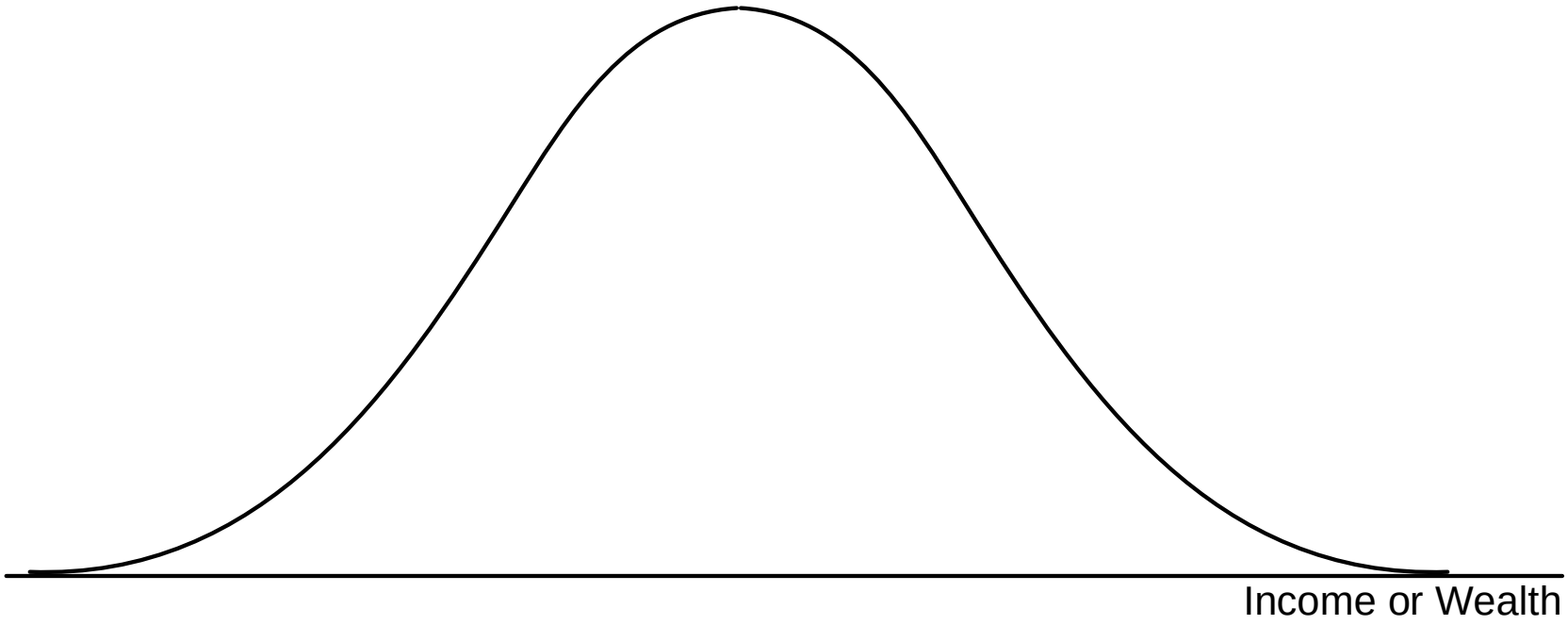
or for continuous distributions

$$P = \int \int A[f(x), d(x,y)] f(x) f(y) dy dx.$$

- Esteban and Ray (1994, 2004) derive from a set of axioms:

$$P = \sum_i \sum_j n_i^{1+\alpha} n_j d_{ij}, \text{ or } P = \int \int |x-y| f(x)^\alpha f(y) dx dy.$$

Polarization: axiomatisation, basic densities, squeezes



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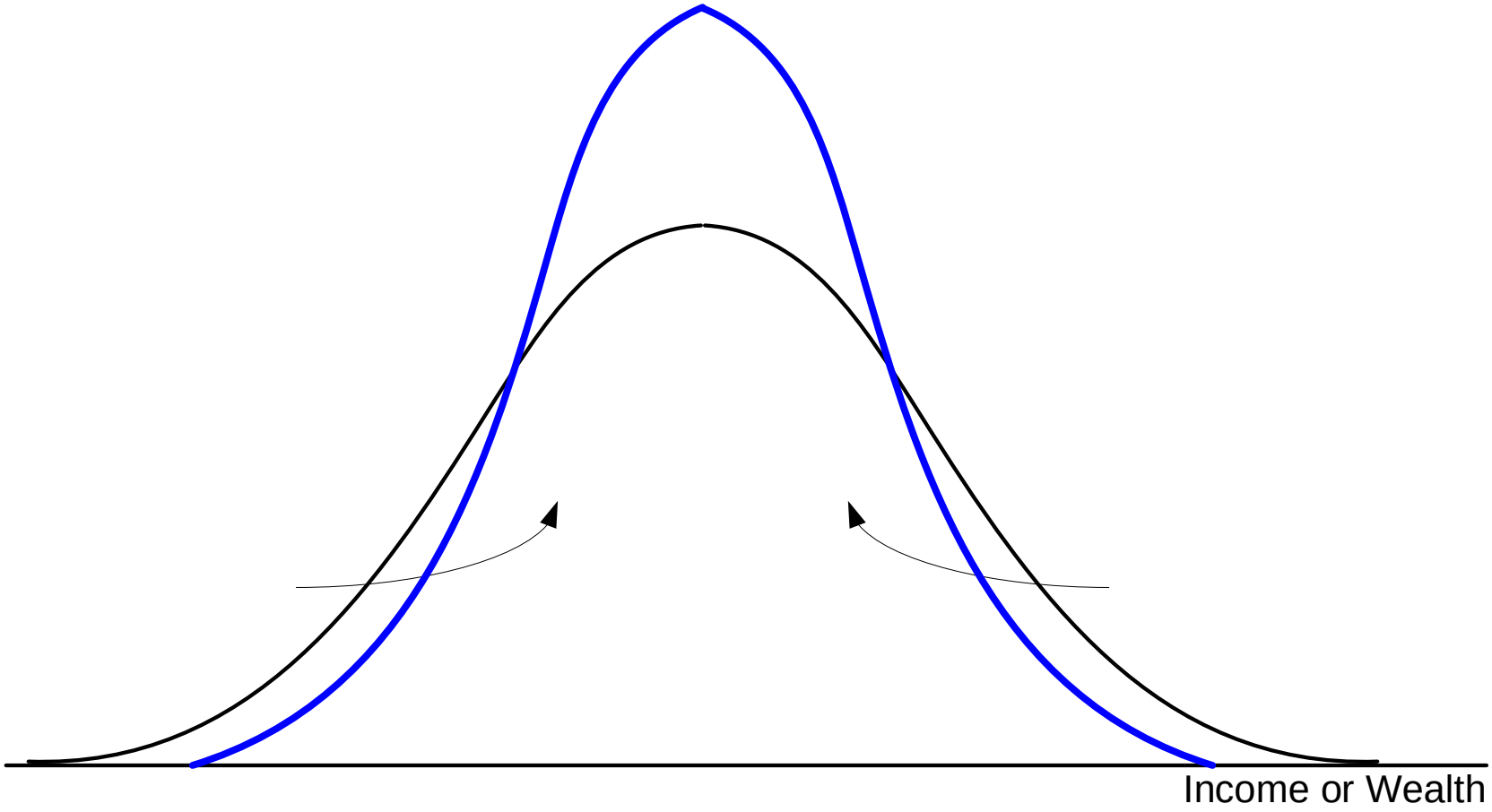
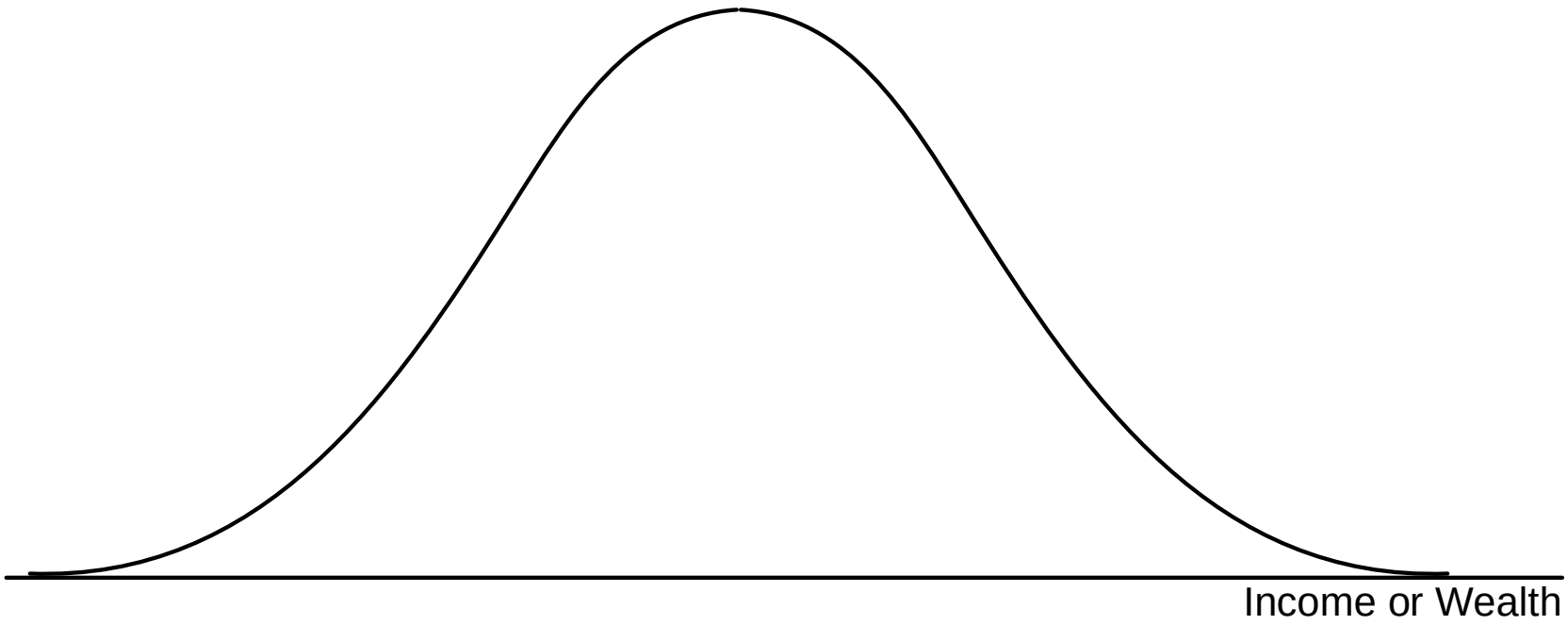


Polarization: axiom 1



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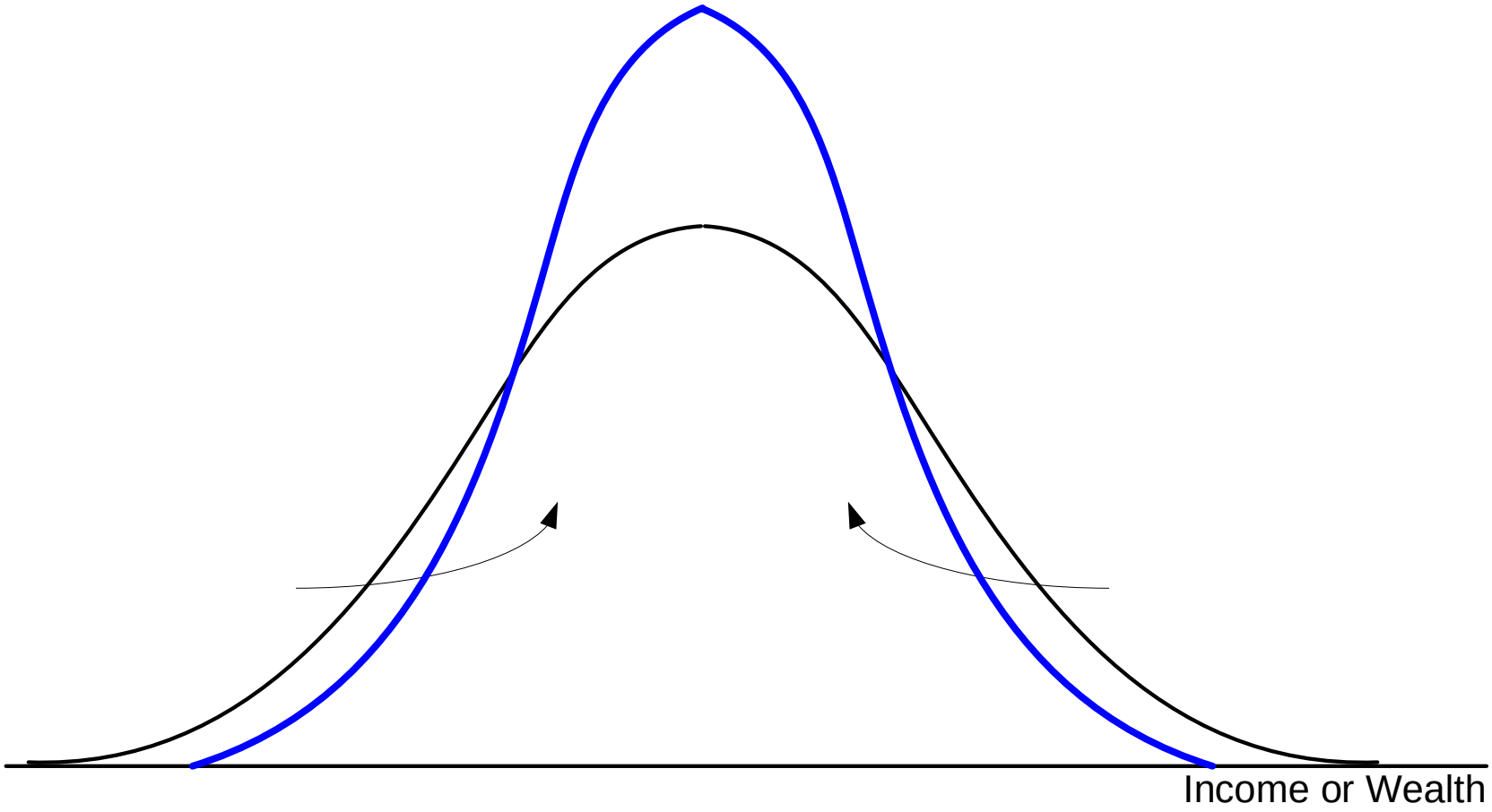
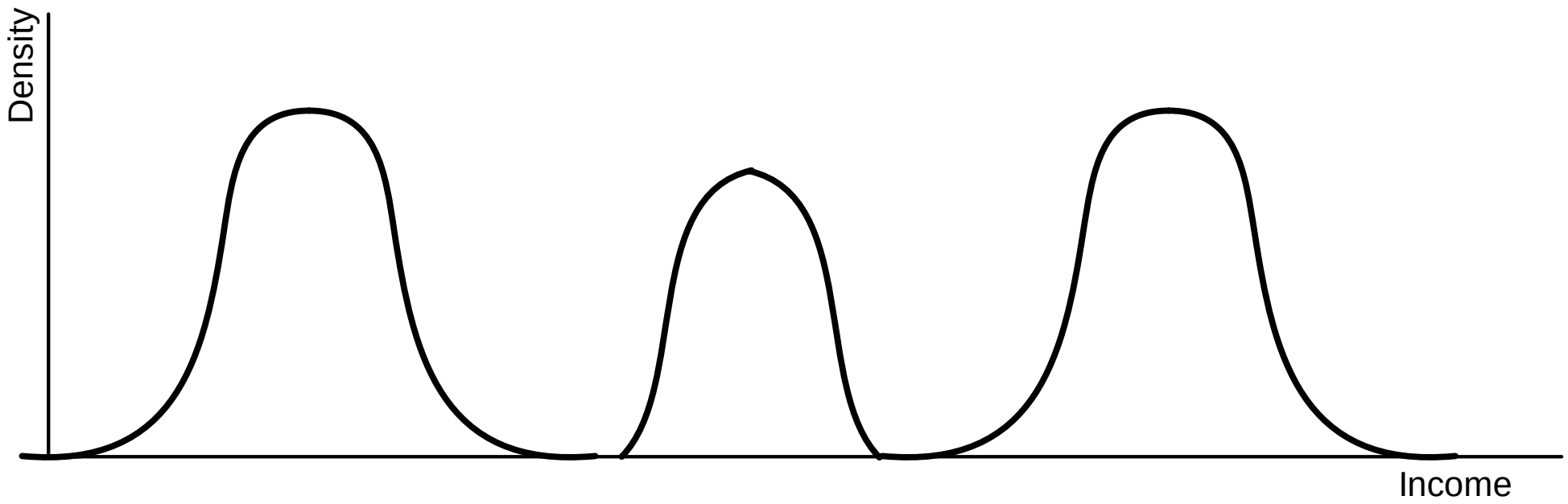


Polarization: axiom 2



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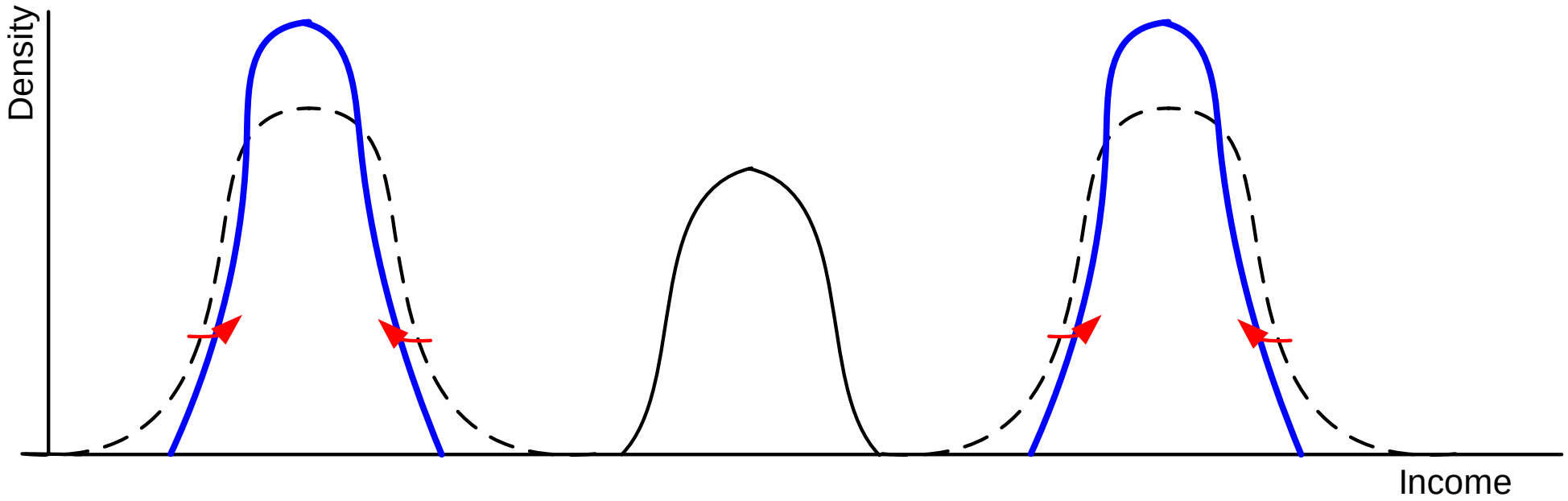
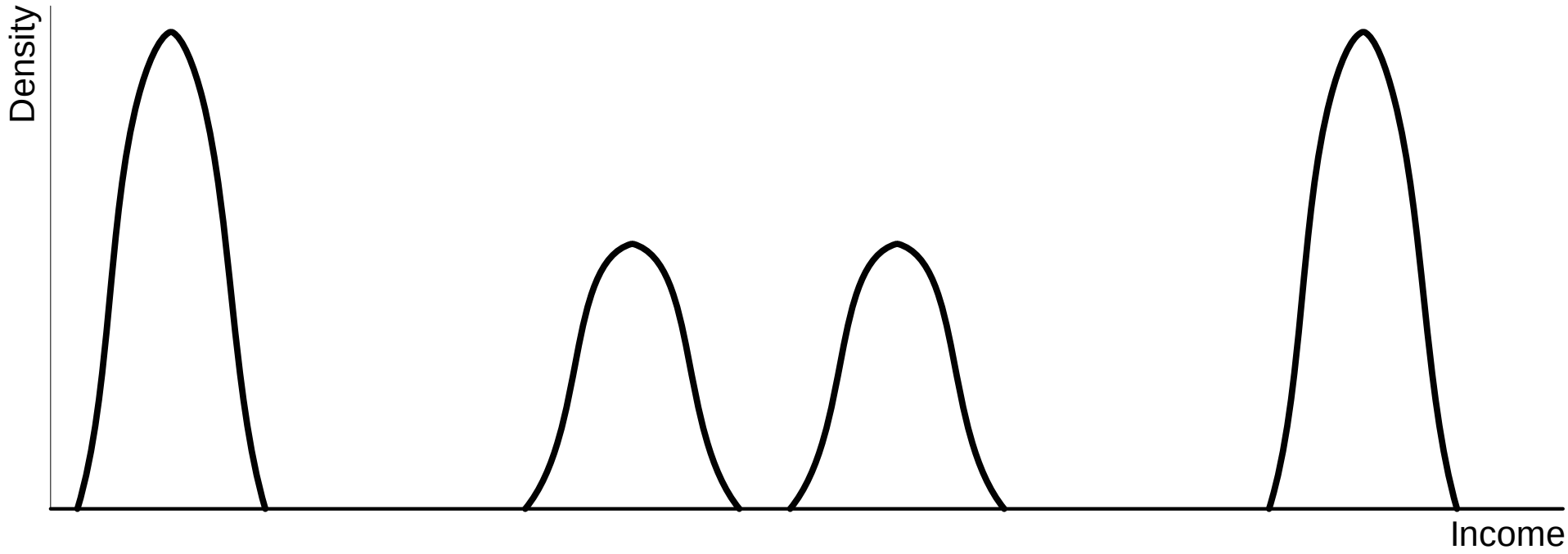


Polarization: axiom 3



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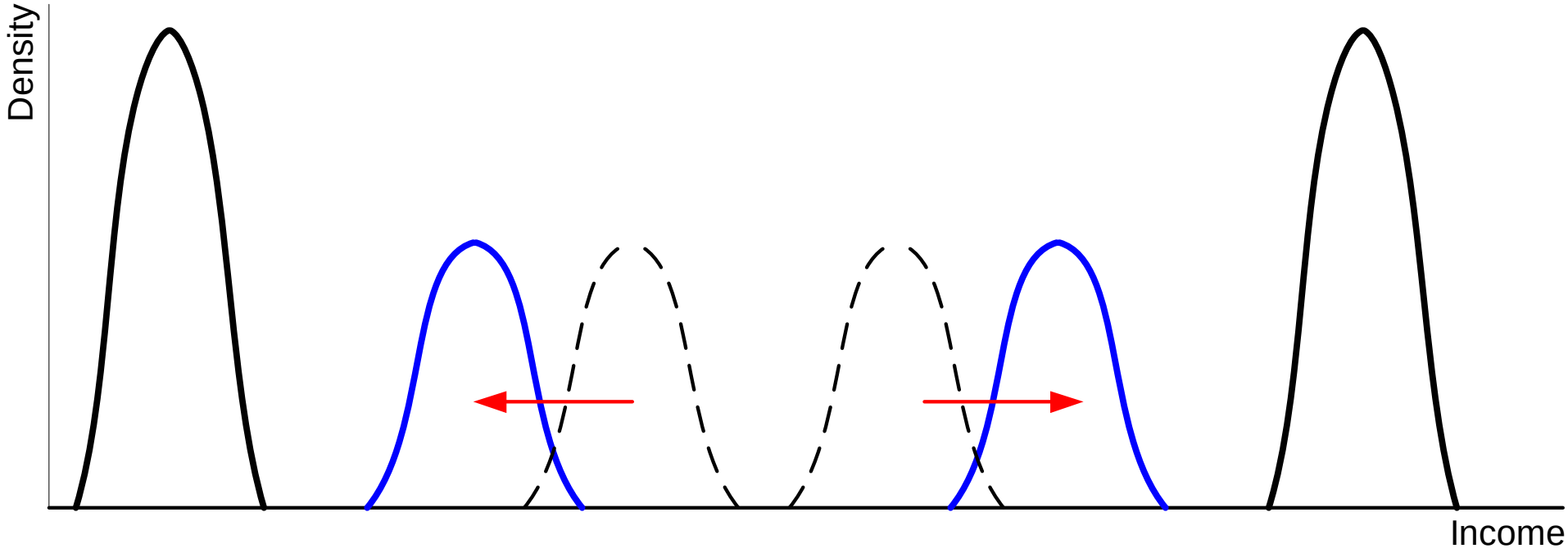
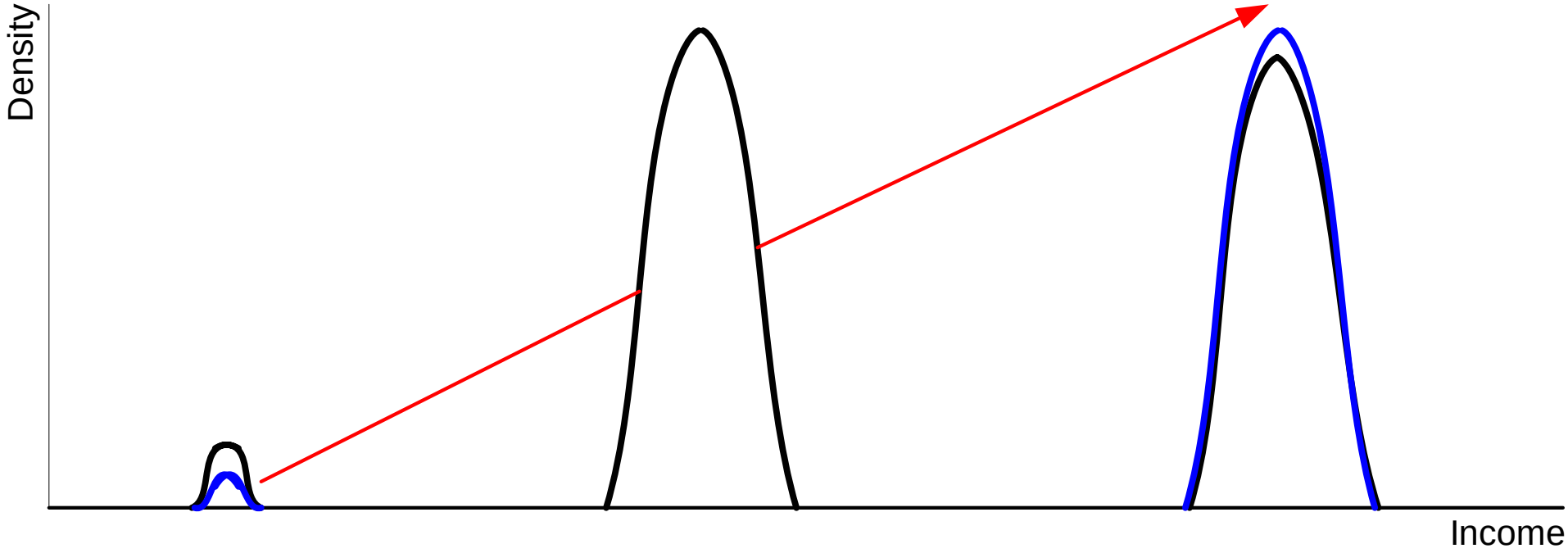


Polarization: axiom 4



Polarization and social antagonism

We started with the generic polarisation index.

If we agree that the axioms capture how this measure should react to these changes, there is one and only one measure that behaves accordingly

$$P = \int \int \left[|x-y| f(x)^{\alpha} \right] f(x) f(y) dx dy = \int \int |x-y| f(x)^{1+\alpha} f(y) dx dy,$$

$\alpha \in [.25, 1]$ from Axioms 1+2+3.

$$P = \int \int |x-y| f(x)^2 f(y) dx dy \text{ from Axioms 1+2+3+4}$$

And for the discrete case we have

$$P = \sum_i \sum_j n_i^2 n_j d_{ij}.$$

A Theory that Informs an Empirical Specification

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- $R_i = \sum_{k \in i} r_i(k)$ is total contributions by group i and $R = \sum_{i=1}^{m} R_i$.
- Probability of conquering power is given by

$$p_j = \frac{R_j}{R}.$$

A Theory that Informs an Empirical Specification

Payoffs

- The winning group controls the government and decides on general policies and on the allocation of economic resources.

- Public good prize (religious dominance, political control, public goods... also hatred): u_{ij} is utility by i if j implements her policy.

$d_{ij} = u_{ii} - u_{ij}$ is inter-group alienation; π converts alienation into money equivalent; $\pi d_{ij} = \pi(u_{ii} - u_{ij})$ is money worth of the loss.

- Private good prize: μ per-capita [$\mu N / N_i = \mu / n_i$]

(Rents from oil, diamonds, scarce land, infrastructures...)

- Payoffs (per-capita) to a member of group i in money value:

If group i wins $\pi u_{ii} + \mu / n_i$, and if group j wins πu_{ij}.

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- Payoffs (per-capita) to a member of group i in money value:

If group i wins $\pi u_{ii} + \mu/n_i$, and if group j wins [and i doesn't] πu_{ij}.

- Net expected payoff to an individual k in group i is

$$\vartheta_i(k) = \sum_{j=1}^{m} p_j \pi u_{ij} + p_i \frac{\mu}{n_i} - c\left(r_i(k)\right).$$

pub priv cost

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Group commitment

- One extreme: individuals maximize own payoff.
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- More generally: define k's extended utility by

$$V_{i(k)} = \vartheta_i(k) + \alpha \sum_{\ell \neq k \in i} \vartheta_i(\ell) = (1-\alpha)\vartheta_i(k) + \alpha \sum_{\ell \in i} \vartheta_i(\ell) =$$

$$= \left[(1-\alpha) + \alpha n_i\right] \left[\sum_{j=1}^{m} p_j \pi u_{ij} + p_i \frac{\mu}{n_i}\right] - c\left(r_i(k)\right) - \alpha \sum_{\ell \neq k \in i} c\left(r_i(\ell)\right).$$

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- Equilibrium [Nash]: A vector of contributions such that every k unilaterally maximizes her extended utility given the action by the others.

A Theory that Informs an Empirical Specification

It is useful to rewrite the expected payoff in terms of losses.

- Loss in public payoff: $d_{ij} \equiv u_{ii} - u_{ij}$ [alienation].
- Loss $\Delta_{ii} \equiv 0$ if i wins, and $\Delta_{ij} \equiv \pi d_{ij} + \mu/n_i$ if any other $j \neq i$ wins.

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The expected payoff

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can be rewritten as

$$\vartheta_i(k) = \pi u_{ii} + \frac{\mu}{n_i} - \sum_{j=1}^{m} p_j \left[\pi d_{ij} + \mu/n_i\right] - c\left(r_i(k)\right).$$

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Hence, the extended, altruistic utility is

$$V_{i(k)} = \Big[(1-\alpha) + \alpha n_i\Big] \left[\pi u_{ii} + \frac{\mu}{n_i} - \sum_{j=1}^{m} p_j \left[\pi d_{ij} + \mu/n_i\right]\right] - c\left(r_i(k)\right) - \alpha \sum_{\ell \neq k \in i} c\left(r_i(\ell)\right).$$

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The first order condition [multiplying both sides by $r_i(k)$ implies that

$$c'\left(r_i(k)^*\right) r_i^* = \Big[(1-\alpha) + \alpha n_i\Big] p_i \sum_{j=1}^{m} p_j \left[\pi d_{ij} + \mu/n_i\right].$$

A Theory that Informs an Empirical Specification

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- A Nash Equilibrium is a vector of $\mathbf{r}^*$ such that all the first order conditions are satisfied.

A Theory that Informs an Empirical Specification

$$c'\left(r_i(k)^*\right) r_i^* = \Big[(1-\alpha)+\alpha n_i\Big] p_i \sum_{j=1}^{m} p_j \left[\pi d_{ij} + \mu/n_i\right].$$

- Assume that in equilibrium $p_i \approx n_i$. This implies $r_i^* \approx \rho$ for some ρ.

$$c'(\rho)\rho \approx \Big[(1-\alpha)+\alpha n_i\Big] \left[\sum_{j=1}^{m} n_i n_j \pi d_{ij} + (1-n_i)\mu\right] =$$

$$= (1-\alpha)\left[\pi \sum_{j=1}^{m} n_j n_i d_{ij} + (1-n_i)\mu\right] + \alpha\left[\pi \sum_{j=1}^{m} n_j n_i^2 \left[d_{ij} + n_i(1-n_i)\mu\right]\right].$$

Adding over all the groups i and writing $\lambda = \frac{\pi}{\pi+\mu}$ we have that:

$$\frac{c'(\rho)\rho}{\pi+\mu} \approx (1-\alpha)\left[\lambda \sum_i \sum_j n_j n_i d_{ij} + (1-\lambda)(m-1)\right] +$$

$$+\alpha\left[\lambda \sum_i \sum_j n_j n_i^2 d_{ij} + (1-\lambda)\sum_i n_i(1-n_i)\right].$$

A Theory that Informs an Empirical Specification

- Theorem. In equilibrium

$$\frac{c'(\rho)\rho}{\pi+\mu} \approx (1-\alpha)\lambda\frac{G}{N} + \frac{\text{Constant}}{N} + \alpha\left[\lambda P + (1-\lambda)F\right].$$

- Meaning of LHS
- Meaning of RHS

  - We have derived from the model that the relation between conflict intensity and the distributional measures is linear.
  - When group concern is maximal, $\alpha = 1$, only F and P play a role. With pure egoism, $\alpha = 0$, only G matters [but G/N is negligeable].

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- Comment on accuracy of approximation: results and simulations.

Empirical implementation: ethnic conflict

- Dependent variable
  - Conflict intensity
- Key independent variables:
  - Relative importance of moral payoffs, λ
  - Degree of social polarization and relevance of inter-group distances, δ_{ij}
  - Sense of group commitment α

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  - Relative importance of moral payoffs, λ
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  - Sense of group commitment α
  - Controls: : population size [pop]; gross domestic product per capita [gdppc]; natural resources [nr], measured by the presence of oil or diamonds; the percentage of mountainous terrain [mount]; non-contiguity [ncont], countries separated from the land area; extent of democracy [democ]; the degree of power [pub] afforded to those who run the country, which is a proxy for the size of the public prize (more on this below); time dummies to capture possible global trends; and regional dummies to capture patterns affecting entire world regions. Finally, because current conflict is deeply affected by past conflict, we use lagged conflict as an additional control.

Empirical implementation: ethnic conflict

We study 138 countries over 1960–2008, with the time period divided into five-year intervals. That yields a total of 1125 observations (in most cases).

- Conflict intensity

- As death toll: PRIO dataset.

prio-c is equal to 0 if the country is at peace in those five years; to 1 if it has experienced low-intensity conflict (more than 25 battle related deaths but less than 1000) in any of these years, or to 2 if the country has been in high-level conflict (more than 1000 casualties) in any of the five years.

- As social unrest: the *Index of Social Conflict*, isc, computed by the Cross-National Time-Series Data Archive.

It provides a continuous measure of several manifestations of social unrest with no threshold dividing "peace" from "war". The index isc is formed by taking a weighted average over eight different manifestations of internal conflict, such as politically motivated assassinations, riots, guerrilla warfare, etc.

Empirical implementation: ethnic conflict

Fractionalization and Polarization, F and P

Two inputs needed: group size of every ethnicity and cultural distances.

- Ethnic group sizes

We have use the data assembled and standardised by J. Fearon. But we also use the definition of linguistic groups provided by Ethnologue.

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- Cultural distances

Using Ethnologue we know the dominant language of each ethnic group. We proxy cultural distance by the number of step back in the language tree since the two languages split apart.

Empirical implementation: ethnic conflict

- Relative publicness of the payoff, λ.

Our proxy for the relative publicness of the prize is given by

$$\Lambda \equiv (\gamma \text{pub*gdppc})/(\gamma \text{pub*gdppc} + \text{oilrsvpc})$$

- Private payoff

We use the value of oil reserves per-capita as an indicator of appropriable rents, hence private payoff, OILRSVPC.

Empirical implementation: ethnic conflict

$$\Lambda \equiv (\gamma \text{pub*gdppc}) / (\gamma \text{pub*gdppc} + \text{oilrsvpc})$$

- Public payoff

We create an index of public payoff, PUB, by measuring the degree of power afforded to those who run the country, "more democratic" being regarded as correlated with "less power".

We use four different proxies for the index: (i) the lack of executive constraints, (ii) the level of autocracy, (iii) the degree to which political rights are flouted, and (iv) the extent of suppression of civil liberties.

We use time-invariant dummies of these variables based on averages over the sample, since short-run changes are likely to be correlated with the incidence of conflict.

We multiply the PUB indicator by per-capita GDP to convert the "public payoff" estimate into monetary equivalents.

The "conversion factor" γ makes the privateness and publicness variables comparable, and allows us to combine them to arrive at the ratio Λ. In the empirical exercise we present here, we set $\gamma = 1$. But the results are robust to the precise choice of this parameter.

Empirical implementation: ethnic conflict

- Group concern, α

We used the World Values Surveys. From the answers to questions like adherence to social norms, identification with the local community, the importance of helping others, and so on. We compute the national average.

Empirical implementation: ethnic conflict

- Want to estimate

$$\rho c'(\rho)_{it} = X_{1i}\beta_1 + X_{2it}\beta_2 + \varepsilon_{it}$$

  - X_{1i} distributional indices.
  - X_{2it} controls (including lagged conflict)

- With binary outcomes, latent variable model:

$$P(\text{prio}x_{it} = 1|Z_{it}) = P(\rho c'(\rho) > W^*|Z_{it}) = H(Z_{it}\beta - W^*)$$

  - where $Z_{it} = (X_{1i}, X_{2it})$

- Baseline: uses max likelihood logit (results identical for probit).

  - p-values use standard errors robust to within-country correlation and heteroskedasticity

Baseline with prio25, Fearon groupings [α, λ]

Variable	[1]	[2]	[3]	[4]	[5]
P	*** 6.90	*** 6.31	*** 6.84	*** 6.83	** 5.86
	(0.000)	(0.009)	(0.006)	(0.006)	(0.016)
F	** 1.13	** 1.11	** 1.31	** 1.30	** 1.19
	(0.029)	(0.036)	(0.012)	(0.011)	(0.024)
G/N	*- 4.37	**- 5.20	**- 5.59	**- 5.56	**- 5.70
	(0.077)	(0.047)	(0.046)	(0.046)	(0.042)
gdppc	***- 0.40	***- 0.39	***- 0.46	***- 0.46	**- 0.34
	(0.001)	(0.003)	(0.001)	(0.001)	(0.021)
pop	** 0.23	** 0.18	0.08	0.08	0.09
	(0.012)	(0.047)	(0.370)	(0.366)	(0.346)
oil/diam	-	0.03	0.01	0.01	- 0.16
		(0.903)	(0.961)	(0.952)	(0.459)
mount	-	-	0.01	0.01	0.01
			(0.212)	(0.212)	(0.210)
ncont	-	-	** 0.85	** 0.84	*** 0.92
			(0.018)	(0.018)	(0.009)
democ	-	-	-	0.02	0.21
				(0.941)	(0.552)
autocr	-	-	-	-	0.07
					(0.826)
polrights	-	-	-	-	0.29
					(0.471)
civlib	-	-	-	-	0.23
					(0.549)
lag	*** 2.81	*** 2.80	*** 2.74	*** 2.74	*** 2.80
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

- Different definitions of conflict, Fearon groupings [prio1000]

Variable	prio25	priocw	prio1000	prioint	isc
P	*** 6.83 (0.006)	** 7.03 (0.017)	*** 10.28 (0.001)	*** 5.89 (0.001)	** 25.64 (0.013)
F	** 1.30 (0.011)	** 1.32 (0.043)	1.01 (0.132)	*** 1.24 (0.009)	2.44 (0.186)
G/N	**- 5.56 (0.046)	- 5.75 (0.235)	**- 13.63 (0.042)	*- 5.48 (0.056)	- 1.32 (0.631)
gdp	***- 0.46 (0.001)	**- 0.36 (0.049)	***- 0.68 (0.000)	***- 0.41 (0.001)	***- 1.99 (0.000)
pop	0.08 (0.366)	0.11 (0.274)	0.09 (0.368)	0.07 (0.361)	*** 1.34 (0.000)
oil/diam	0.01 (0.952)	0.08 (0.795)	0.06 (0.859)	- 0.04 (0.841)	- 0.75 (0.376)
mount	0.01 (0.212)	0.01 (0.141)	0.00 (0.543)	0.00 (0.422)	** 0.04 (0.050)
ncont	** 0.84 (0.018)	0.61 (0.132)	0.58 (0.142)	0.48 (0.101)	** 3.70 (0.019)
democ	0.02 (0.941)	0.05 (0.882)	- 0.22 (0.535)	0.06 (0.794)	0.98 (0.373)
lag	*** 2.74 (0.000)	*** 3.73 (0.000)	*** 2.81 (0.000)	*** 2.00 (0.000)	*** 0.48 (0.000)

- $P(20 \to 80)$, prio25 15%–31%, priocw 7%–17%, prio1000 3%–10%.
- $F(20 \to 80)$, prio25 14%–30%, priocw 7%–16%, prio1000 3%–6%.

- Different definitions of conflict, *Ethnologue* groupings

Variable	prio25	priocw	prio1000	prioint	isc
P	*** 7.56	** 7.80	** 9.33	*** 6.52	** 26.96
	(0.005)	(0.014)	(0.021)	(0.005)	(0.016)
F	0.55	0.71	0.42	0.40	- 1.25
	(0.195)	(0.202)	(0.471)	(0.305)	(0.409)
G/N	*- 2.42	- 1.71	- 8.13	*- 2.33	0.52
	(0.089)	(0.343)	(0.183)	(0.077)	(0.835)
gdp	***- 0.51	**- 0.40	***- 0.68	***- 0.48	***- 2.45
	(0.000)	(0.017)	(0.000)	(0.000)	(0.000)
pop	0.10	* 0.17	0.13	0.08	*** 1.41
	(0.283)	(0.081)	(0.251)	(0.283)	(0.000)
oil/diam	0.14	0.22	0.20	0.10	- 0.06
	(0.512)	(0.456)	(0.542)	(0.618)	(0.949)
mount	* 0.01	* 0.01	0.00	0.01	** 0.05
	(0.099)	(0.079)	(0.446)	(0.180)	(0.033)
ncont	** 0.71	0.45	0.29	0.38	** 3.39
	(0.035)	(0.246)	(0.444)	(0.190)	(0.024)
democ	0.08	0.17	- 0.11	0.13	0.98
	(0.767)	(0.602)	(0.764)	(0.580)	(0.393)
lag	*** 2.75	*** 3.73	*** 2.86	*** 2.01	*** 0.49
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Onset vs incidence, Fearon and *Ethnologue* groupings [quick]

Variable	onset2	onset5	onset8	onset2	onset5	onset8
P	*** 5.78 (0.003)	** 4.63 (0.012)	* 3.45 (0.084)	*** 7.71 (0.001)	*** 7.45 (0.001)	*** 6.97 (0.003)
F	** 1.15 (0.024)	* 0.89 (0.093)	* 0.92 (0.093)	** 0.86 (0.034)	0.50 (0.183)	0.52 (0.163)
G/N	**- 6.16 (0.035)	*- 4.16 (0.081)	- 3.43 (0.157)	*- 2.98 (0.054)	*- 2.76 (0.069)	- 2.34 (0.123)
gdp	***- 0.50 (0.000)	***- 0.53 (0.000)	***- 0.56 (0.000)	***- 0.51 (0.000)	***- 0.58 (0.000)	***- 0.61 (0.000)
pop	0.09 (0.279)	* 0.14 (0.096)	* 0.16 (0.085)	0.09 (0.327)	0.11 (0.251)	0.12 (0.255)
oil/diam	0.30 (0.182)	0.25 (0.248)	0.27 (0.243)	0.37 (0.104)	0.34 (0.119)	0.35 (0.132)
mount	0.00 (0.250)	0.01 (0.199)	* 0.01 (0.085)	0.01 (0.100)	0.01 (0.127)	* 0.01 (0.064)
ncont	** 0.77 (0.011)	** 0.66 (0.022)	0.46 (0.126)	** 0.69 (0.016)	** 0.65 (0.016)	* 0.49 (0.088)
democ	- 0.08 (0.795)	0.17 (0.566)	0.25 (0.417)	- 0.00 (0.990)	0.21 (0.461)	0.28 (0.357)
lag	0.20 (0.415)	- 0.41 (0.144)	*- 0.64 (0.052)	0.16 (0.517)	- 0.45 (0.108)	**- 0.69 (0.034)
Groups	Fearon	Fearon	Fearon	Eth	Eth	Eth

- Now, the estimation uses the full structure of the model.

Because of large populations we eliminate G/N and we estimate (in three steps)

$$\text{conflict intensity} = b_1\alpha(1-\lambda)F + b_2\alpha\lambda P + b_3 X + \text{ error}.$$

Variable	(1) prio-c	(2) isc	(3) prio-c	(4) isc	(5) prio-c	(6) isc
P	*** 5.16 (0.001)	*** 19.50 (0.002)	- 1.48 (0.606)	- 16.33 (0.227)	- 1.47 (0.701)	- 23.80 (0.212)
F	* 0.93 (0.070)	* 3.56 (0.061)	0.76 (0.196)	0.31 (0.878)	0.87 (0.403)	- 0.16 (0.710)
$P\lambda$			*** 11.174 (0.003)	*** 61.89 (0.001)		
$F(1-\lambda)$			* 1.19 (0.097)	*** 10.40 (0.000)		
$P\lambda\alpha$					* 12.65 (0.087)	*** 90.32 (0.010)
$F(1-\lambda)\alpha$					2.54 (0.164)	** 13.15 (0.018)
gdppc	** - 0.34 (0.047)	*** - 2.26 (0.004)	* - 0.36 (0.080)	*** - 3.02 (0.001)	- 0.25 (0.375)	*** - 3.68 (0.007)
pop	*** 0.24 (0.000)	*** 1.14 (0.000)	*** 0.21 (0.001)	*** 1.30 (0.000)	* 0.09 (0.166)	** 1.29 (0.013)
nr	- 0.27 (0.178)	- 0.53 (0.497)	- 0.00 (0.570)	0.00 (0.432)	** 0.00 (0.011)	* 0.00 (0.090)
mount	0.00 (0.537)	0.02 (0.186)	0.00 (0.362)	* 0.03 (0.061)	* 0.01 (0.060)	** 0.05 (0.020)
ncont	*** 1.06 (0.001)	*** 4.55 (0.001)	** 0.77 (0.026)	*** 4.28 (0.001)	*** 1.37 (0.004)	*** 5.89 (0.000)
politics	0.18 (0.498)	0.29 (0.789)	- 0.00 (0.328)	** - 0.00 (0.026)	0.00 (0.886)	- 0.00 (0.374)
lag	*** 1.99 (0.000)	*** 0.46 (0.000)	*** 1.94 (0.000)	*** 0.44 (0.000)	*** 1.84 (0.000)	*** 0.40 (0.000)
const	-	0.90 (0.915)	-	9.19 (0.398)	-	15.40 (0.328)
(Pseudo)-R^2	0.35	0.43	0.36	0.44	0.40	0.43
Observations	1125	1111	1104	1090	447	443
Countries	138	138	138	138	53	53

Importance of polarisation and fractionalisation

Consider the baseline set of controls (Table 1, Column 4).

- Our estimated coefficients imply that

- if we move from the 20th percentile of polarization to the 80th percentile, holding all other variables at their means, the probability of conflict rises from approximately 13% to 29%.

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- Performing the same exercise for F takes us from 12% to 25%. These are similar (and strong) effects.

Empirical results and country examples

- In next page we have two rank ordered lists of countries. List A keeps F at the median and reflect the variation in P. List B keeps P at the median and lets F vary.

- Chile exhibits the median fractionalization in our country set. Focus on countries in the 45–55th percentiles of F and rank these countries in increasing order of polarization.

- Taiwan has the median polarisation. Rank this decile in increasing F.

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- In both cases the first column captures intensity of conflict (0,1,2) and the second column its duration.

Part A	Intensity	Years
Dom. Rep.	1	1
Morocco	1	15
USA	0	0
Serbia-Mont.	2	2
Spain	1	5
Macedonia	1	1
Chile	1	1
Panama	1	1
Nepal	2	14
Canada	0	0
Myanmar	2	117
Kyrgystan	0	0
Sri Lanka	2	26
Estonia	0	0
Guatemala	1	30

Part B	Intensity	Years
Germany	0	0
Armenia	0	0
Austria	0	0
Taiwan	0	0
Algeria	2	22
Zimbabwe	2	9
Belgium	0	0
USA	0	0
Morocco	1	15
Serbia-Mont.	2	2
Latvia	0	0
Trin. Tob.	1	1
Guinea-Bissau	1	13
Sierra Leone	2	10
Mozambique	2	27

Table 2—: Distribution and Conflict With Country Examples.

Notes. Part A ranks the median fractionalization decile in increasing order of polarization. Part B ranks the median polarization decile in increasing order of fractionalization.

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- One might object that the results are driven by the peculiarities of some regions that exhibit both highly polarized ethnicities and frequent and intense conflicts. However, we use regional controls. Also have repeated the exercise by removing one continent at a time.

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- The links between ethnicity and conflict are significant and strong.
- The theory allows us to draw additional interesting inferences:

- We find conclusive evidence that civil conflict is associated with public payoffs and not just by the quest for private payoffs or monetary gain. Otherwise only fractionalization would matter, and not polarization.

- The model works well with both high intensity civil wars [PRIO-C] and smaller scale social unrest [ISC].

- The disappearance of the effects of P and F once interactions are introduced suggests that ethnicity matters, not intrinsically [primordialists], but rather instrumentally when ethnic markers are used to restrict political power or economic benefits to a subset of the population.

- One might object that the results are driven by the peculiarities of some regions that exhibit both highly polarized ethnicities and frequent and intense conflicts. However, we use regional controls. Also have repeated the exercise by removing one continent at a time.

- Caveat: ethnicity is one factor of conflict but this does not say that economic class differences might also be relevant. In research agenda.