Changing Gaps, Stable Odds

Parental Education and Ability during Educational Expansion

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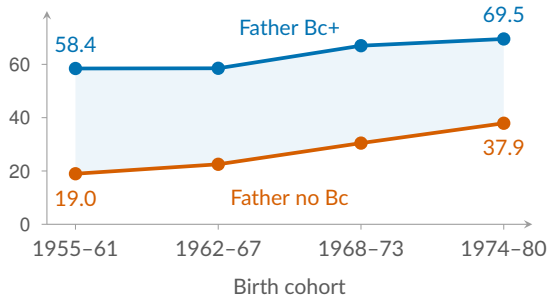
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Educational expansion

Bachelor or higher (%), all children



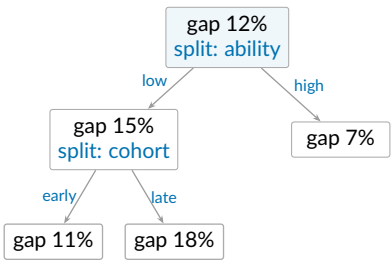
Approach

- Agnostic search over all observed characteristics
- No prespecified interactions
- Ability stands out

Question. What drives heterogeneity in the parental gap?

Adjusted gap and log-odds contrast

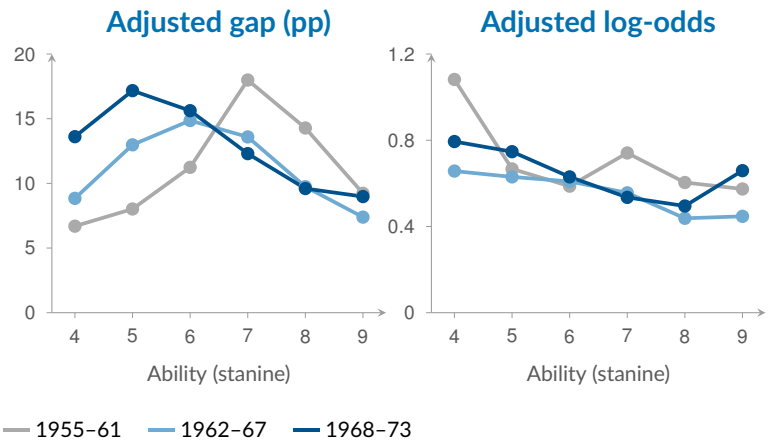
Causal forest



Two scales

Father Bc+	$\mu_1 = E[\Pr(Y = 1 \mid W = 1, X)]$
Father no Bc	$\mu_0 = E[\Pr(Y = 1 \mid W = 0, X)]$
Adjusted gap	$\Delta = \mu_1 - \mu_0$
Log-odds	$\delta = \operatorname{logit} \mu_1 - \operatorname{logit} \mu_0$

Changing gaps, stable odds



Threshold model

$$\text{logit}\,\mu_1 - \text{logit}\,\mu_0 = \delta$$

$$\Delta \approx \underbrace{\mu_0(1-\mu_0)}_{\text{base rate}} \times \delta$$

Same association, higher base rate, different gap.