An IRT perspective on success and failure in democratization episodes

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Motivating metaphor

IRT	FASDEM
students	country-years
courses	low-level indices
GPA	polyarchy (EDI)
graduation	failure/success/censoring

- GPA/EDI is a deterministic function of courses/indices
- F/S is a deterministic function of EDI, ROW, and some thresholds

The Question

- Is there a difference between S and F episodes in how do the low-level indices contribute to their EDI?
- That is, given condition on EDI, how do the observations from S and F episodes differ in their index values?

Modeling I.

- A Generalized Additive Model

$$y_i = s(x_i, \theta) + \epsilon_i$$

  where i is a student (CY) y is a course (index), x EDI, ϵ a residual, $s(.)$ a spline.
- Fit separately to observations in S and F episodes and compare $E[y_i|x_i, S]$ to $E[y_i|x_i, F]$.

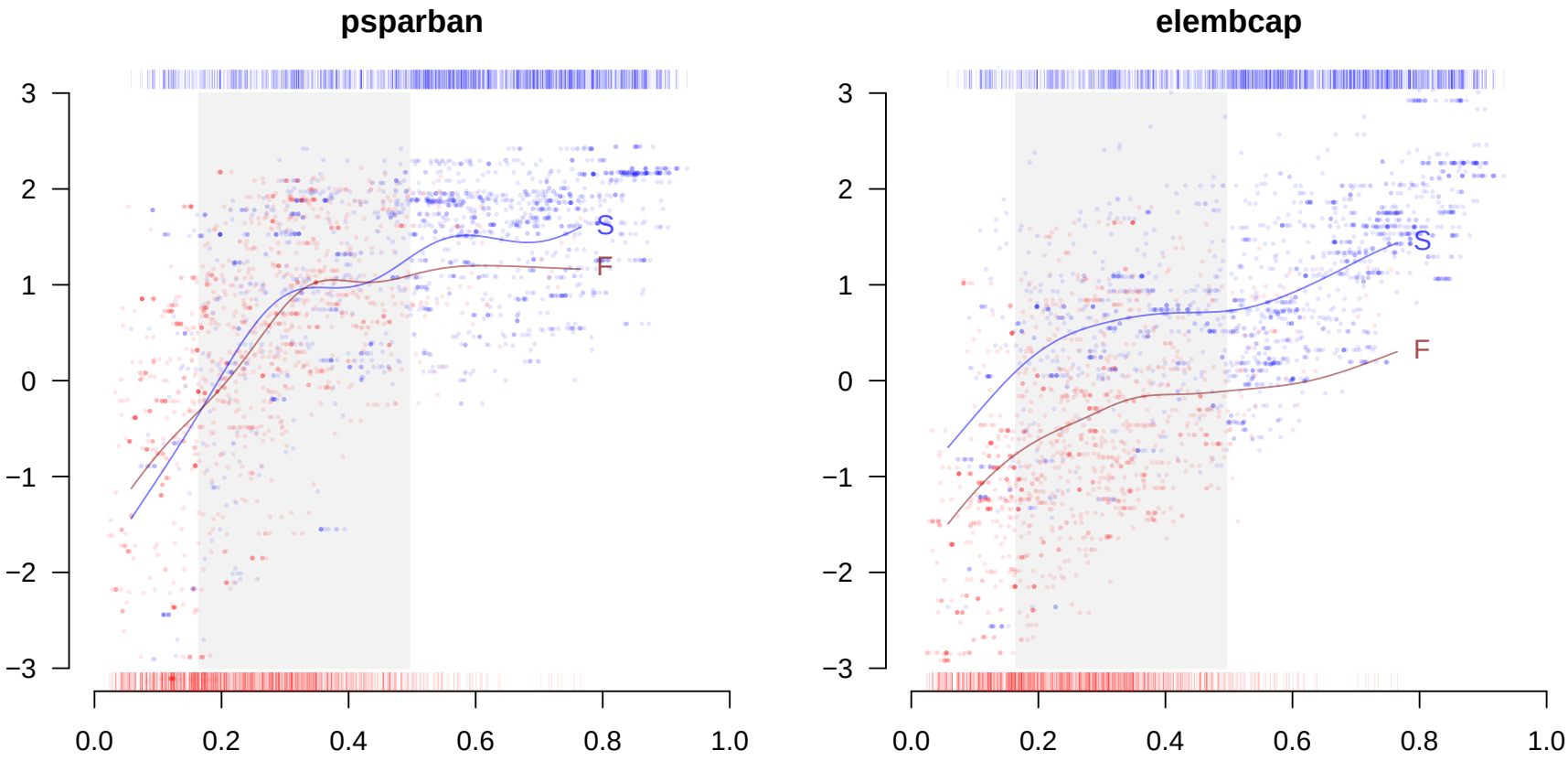
Modeling II.

- Easy to include episode and year intercepts,

$$y_i = s(x_i, \theta) + \epsilon_i + \alpha_{episode[i]} + \beta_{year[i]}$$

  as fixed, regularized, or random.
- Turns out that that makes little difference.

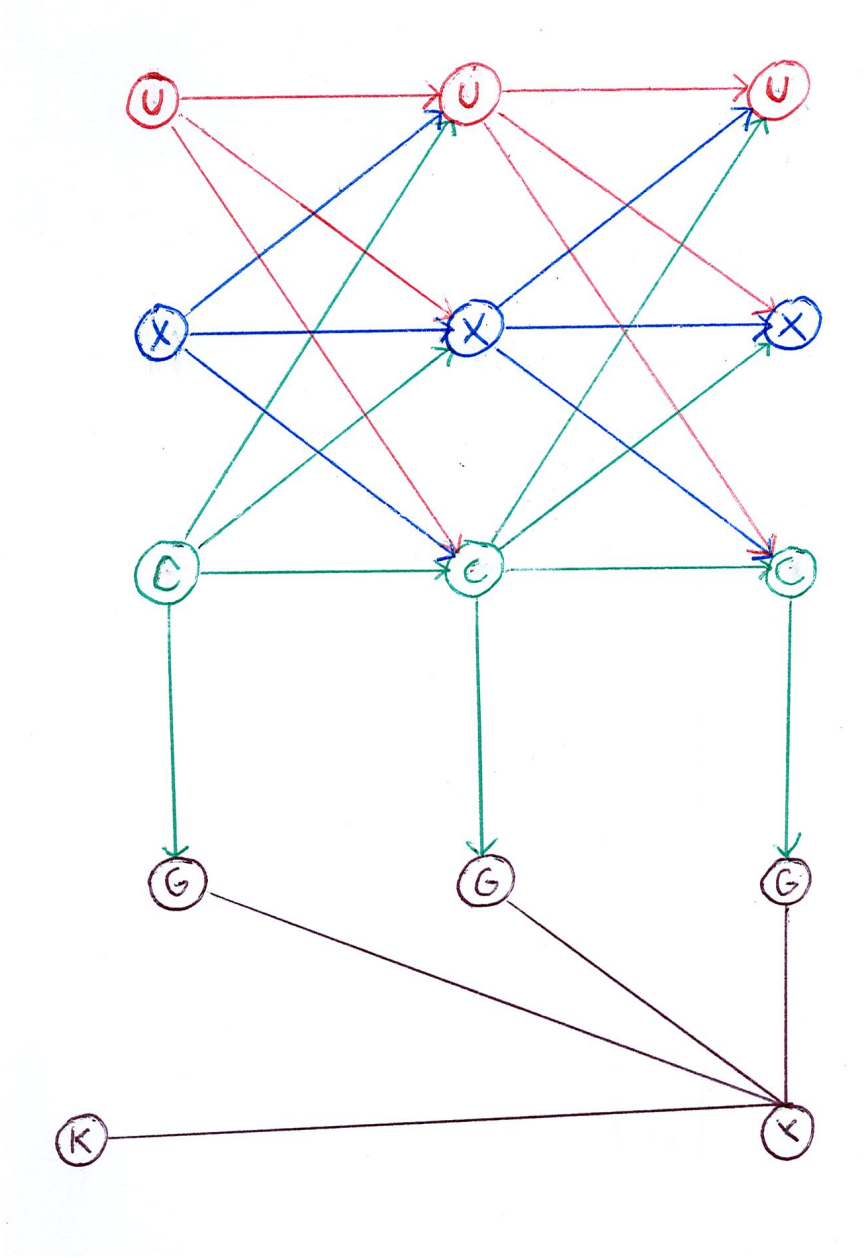
Illustration I.



Now what about causation?

- S/F is post-treatment wrt EDI & RoW
- EDI (& RoW?) deterministic functions of courses (w. known weights)
- Contemporaneous effects *mechanical*, thus not interesting
- Which treatment history effects to focus on?

Illustration II.



- U – unobserved
- X – observed non-V-Dem
- C – V-Dem indices
- $G = f(\{C\})$ deterministic
- $Y = f(\{G\}, \{K\})$ deterministic
- figure $t - 1$ only