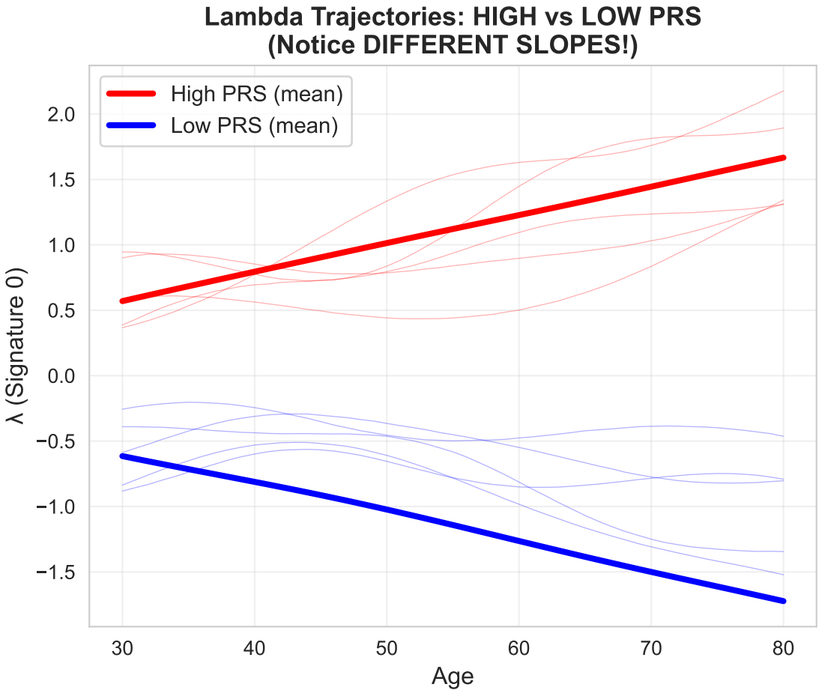

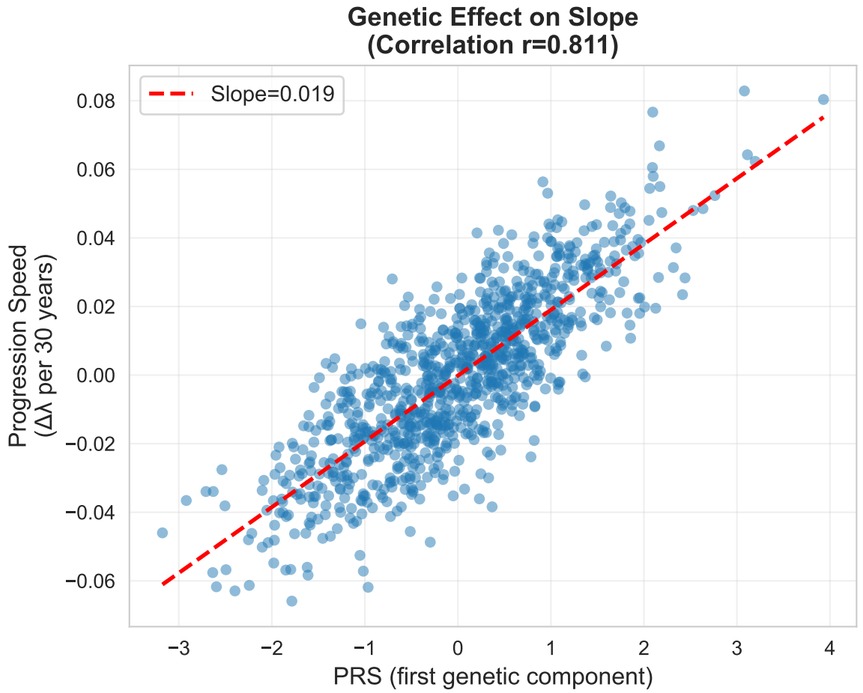

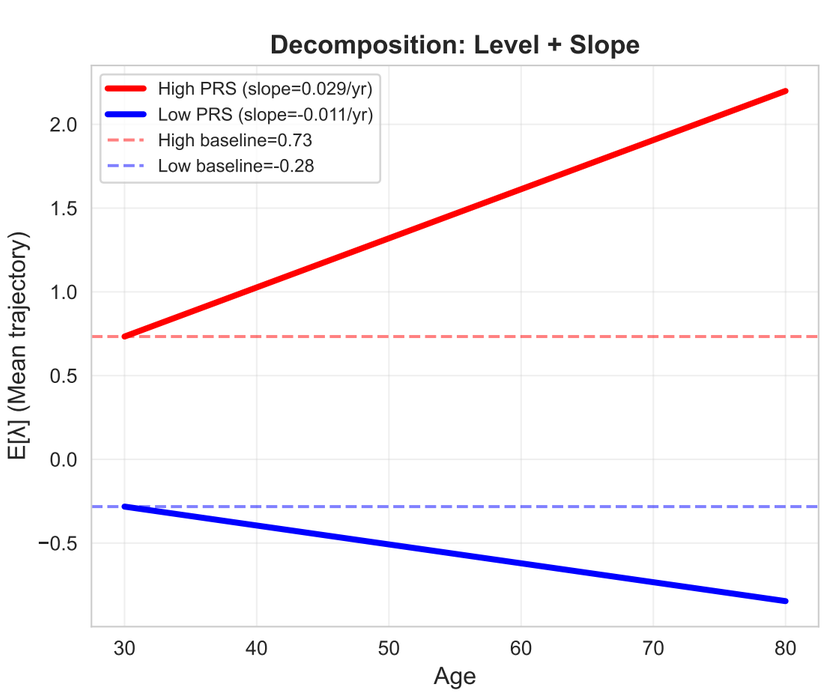

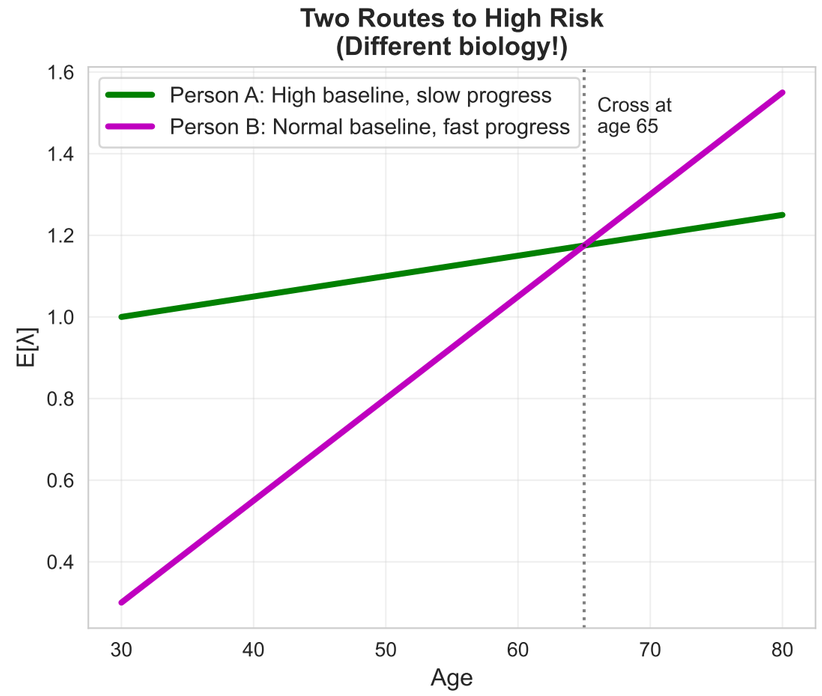

KEY INSIGHT

Mean and Variance are INDEPENDENT

• Systematic effects → MEAN

- γ_level: baseline

- γ_slope: progression speed

• Random variation → VARIANCE

- Ω_λ: same for all individuals

→ These are SEPARABLE → IDENTIFIABLE!

```
TRUE PARAMETERS:

Gamma_level[0,:]:
  [0.5 0.3 0.1]

Gamma_slope[0,:]:
  [0.02  0.015 0.005] /year

GROUPS:
  High PRS: 307 indiv
  Low PRS: 305 indiv

EFFECT SIZES:
  Level diff: 1.185
  Slope diff: 2.205
  Over 50 years!
```