



MU Test Plan — Test 8 (γ -Sweep, $\beta=8 \rightarrow 10$ step=0.25)

Goal

- Check if the **critical β threshold (~ 9)** is universal or shifts depending on γ .
 - We fix $h = 0.1$ and sweep $\gamma = 0.5, 1.0, 2.0$.
 - β is scanned in increments of 0.25 to capture the onset of survival.
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Parameters

- $h = 0.1$ (fixed)
 - $\gamma = 0.5, 1.0, 2.0$ (tested in one run)
 - $\beta = [8.0, 8.25, 8.5, \dots, 10.0]$
 - $v = 0.050$ (slow), $v = 0.500$ (fast)
 - $T(r) = 1/(1+|r-r_c|)$, $r_c=0.25$
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Predictions

- $\gamma=0.5 \rightarrow$ weaker action \rightarrow threshold may appear slightly earlier ($\beta \approx 8.5$).
 - $\gamma=1.0 \rightarrow$ baseline, threshold ~ 9.0 (as we've already seen).
 - $\gamma=2.0 \rightarrow$ stronger action \rightarrow threshold may shift later ($\beta \approx 9.5-10$).
 - If thresholds stay aligned, then the law is **universal**.
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What We're Looking For

- The β -value where w_{slow} jumps from $\sim 10^{-9}$ to $\sim 10^{-2}$.
- Compare across γ values.
- If thresholds are **the same**, Truth overrides action cost.
- If thresholds **shift**, then the action cost competes with Truth and environment matters.

