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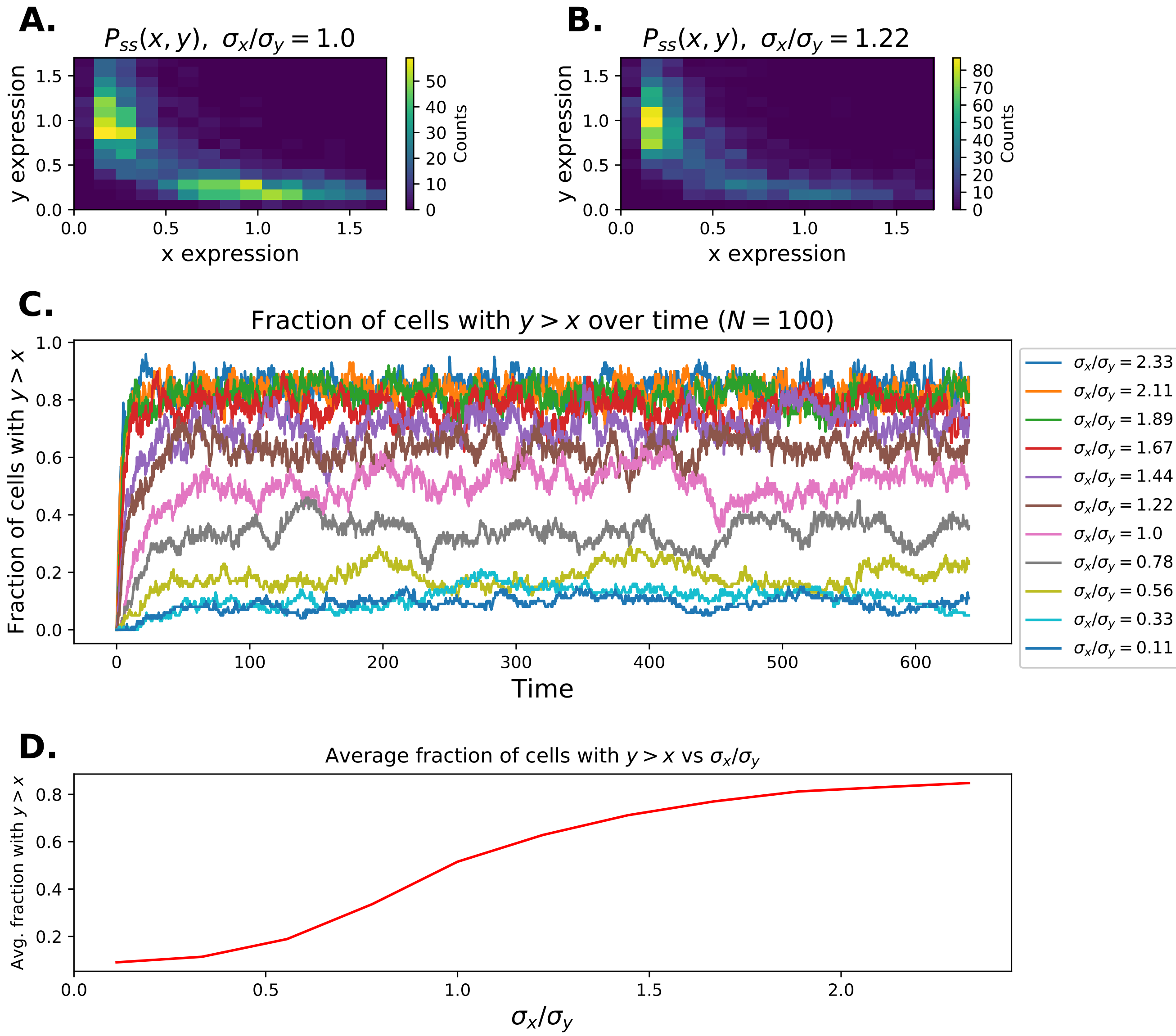

Panel A: This panel depicts a numerical approximation to the steady state probability distribution of the system given that $\sigma_x = \sigma_y = 0.45$. It is meant to show that, given that the equations governing x and y are completely symmetric, the steady state distribution comes out completely symmetric, with two attractors.

To obtain this figure, $N = 2000$ cells were initialized at the coordinates of the deterministic (hi, low) attractor. Then the system was run for 640 time units, with a time step of 3200, for each of those cells. The final locations of each cell were collected, and binned (15 bins in both the x and y directions).

Panel B: This panel depicts a numerical approximation to the steady state probability distribution of the system given that $\sigma_x = 0.55$ and $\sigma_y = 0.45$. The asymmetric noise coefficients produce noticeable occupancy asymmetry, even though they do not seem that different.

This figure was obtained via the method described in the panel A description.

Panel C: This panel depicts the fraction of cells with their y coordinate *greater* than their x coordinate over time, given a population of $N = 100$ cells, for a variety of σ_x/σ_y choices. It is meant to show that, as noise asymmetry is introduced, the fraction of cells in each attractor changes dramatically. Of course, the fraction of cells with $y > x$ is not a *perfect* proxy for the relative fractions, but it is pretty good given the reasonably large cell population, and that cells do not generally spend much time in the intermediate region between the attractors.

σ_y was kept fixed at 0.45 (which was chosen because it's relative largeness made the simulations converge in less time), while σ_x was varied. In particular, the chosen values of σ_x were $1.05, 0.95, 0.85, 0.75, 0.65, 0.55, 0.45, 0.35, 0.25, 0.15, 0.05$.

For a given value of σ_x, $N = 100$ cells were initialized at the coordinates of the deterministic (hi, low) attractor. Then the system was run for 640 time units, with a time step of 3200, for each of those cells. At each time step, the number of cells with $y > x$, and the number of cells with $x > y$, were counted.

Panel D: This panel depicts the average fraction of cells with their y coordinate eventually *greater* than their x coordinate, as a function of σ_x/σ_y (where σ_y has been fixed). It is meant to show that, as noise asymmetry is introduced, there is initially a dramatic change in relative occupancy. Eventually, relative occupancy saturates.

The results from the method described in panel C were used. For a given curve (corresponding to a given value of σ_x), the noisy fraction was averaged over all time steps roughly after when the fraction reached 'steady state.' In other words, an average was taken once the noisy fraction looked like it settled down.

Identifying the threshold time for each fraction curve, after which an average was taken over all future time steps, was done by hand rather than via some algorithm. For example, the dark blue curve at the top of panel D (corresponding to $\sigma_x/\sigma_y \approx 2.33$) leaps up quickly, and then oscillates around some average value. I chose $T = 100$ as a reasonable time point to start taking the average value of the curve. The full list of identified thresholds is: [100, 100, 100, 100, 100, 100, 100, 200, 400, 400, 400]. In other words, as σ_x decreases, I choose a higher threshold because I expect that the fraction will taken longer to converge (since lowering σ_x makes it take longer for cells to move out of the (hi, low) attractor).